CONTENTS

NUMBER 1

POLYHEDRON SYMPOSIA-IN-PRINT NUMBER 14

RECENT DEVELOPMENTS IN ORGANOMETALLIC CHEMISTRY
IN HONOUR OF PROFESSOR JOHN E. BERCAW ON THE OCCASION
OF HIS 50th BIRTHDAY

Editor: M. H. Chisholm & *Guest Editor*: Gerard Parkin

	iii	Contributors to this issue
	iv	Deposition of crystallographic data
	v	Announcement: Polyhedron Symposia-in-Print
Ying Mu, **W. E. Piers,** L. R. MacGillivray and M. J. Zaworotko	1	New ligand environments for soluble Ziegler–Natta olefin polymerization catalyst precursors. X-ray structures of $[(\eta^5\text{-}C_5Me_4Si(Me_2)OCH_2C_4H_7NH)ZrCl_3]$ and $[(\eta^5\text{-}C_5Me_4SiMe_3)_2Zr_2(CH_3)_2(\mu\text{-}\eta^2\text{-}C_5H_9NO)_2]$
M. D. Fryzuk, S. S. H. Mao, P. B. Duval and S. J. Rettig	11	Synthesis, structure and fluxional behavior of $[\eta^5\text{-}C_5H_3\text{-}1,3\text{-}(SiMe_2CH_2PPr^i_2)_2]ZrCl_{3-x}R_x$ (R=Me, CH_2Ph, x=0, 1, 3)
W. A. Howard, **G. Parkin** and A. L. Rheingold	25	Non-classical carbonyl complexes of zirconium: the syntheses, characterization, and reactivities of $(\eta^5\text{-}C_5Me_5)_2Zr(\eta^2\text{-}E_2)(CO)$ (E=S, Se, Te)
L. J. Procopio, P. J. Carroll and **D. H. Berry**	45	Structure and reactivity of $Cp_2Zr(\eta^2\text{-}Me_2Si{=}{=}N^tBu)(CO)$: an unusual silanimine carbonyl complex with extensive σ–π^* back-bonding
L. K. Myers, D. M. Ho, **M. E. Thompson** and C. Langhoff	57	Third order nonlinear optical properties of group 4 metallocenes
L. Kloppenburg and **J. L. Petersen**	69	Stereochemical influence of the pentamethylcyclopentadienyl ligand on the isocyanide insertion reactions of the 1-sila-3-hafnacyclobutane complex, $(C_5Me_5)(C_5H_5)Hf(CH_2SiMe_2CH_2)$
C. M. Jones and **N. M. Doherty**	81	The nature of the bridging nitrido ligand. Synthesis and reactivity of heterobimetallic nitrido-bridged compounds
G. C. Bazan and G. Rodriguez	93	Tantalum-borollide alkyl complexes
P. W. Dyer, **V. C. Gibson,** J. A. K. Howard, B. Whittle and C. Wilson	103	Four coordinate molybdenum alkene and alkyne complexes bearing ancillary imido ligands
L. M. Atagi and **J. M. Mayer**	113	Formation of tungsten carbyne complexes from vinyl- and allylsilanes and -stannanes
S. K. Grumbine, D. A. Straus, **T. D. Tilley** and A. L. Rheingold	127	Synthesis, structure and dynamic studies on base-stabilized silylene complexes $[(\eta^5\text{-}C_5Me_5)(PMe_3)_2RuSiX_2(NCMe)^+]$
P. T. DiMauro and **P. T. Wolczanski**	149	Carbon–carbon bond activation via formal β-methyl-elimination from $[\eta^5\text{-}6,6\text{-}dimethylcyclohexadienyl)Ru(dppe)(CH_2Cl_2)]PF_6$
L. A. Howe and **E. E. Bunel**	167	Oxidative addition of RCOI to $[AsPh_4][Rh(CO)_2I_2]$. Synthesis of $[AsPh_4][RCORh(CO)_2I_3]$ (R=Me, Et, n-Pr, i-Pr)
P. T. Matsunaga, J. C. Mavropoulos and **G. L. Hillhouse**	175	Oxygen-atom transfer from nitrous oxide (N≡N=O) to nickel alkyls. Syntheses and reactions of nickel(II) alkoxides

B. L. Bennett, J. Birnbaum and **D. M. Roddick** 187 Protonation studies of electrophilic platinum(II) alkyl complexes: synthesis and characterization of (dfepe)Pt(Me)X (X=O_2CCF_3, OSO_2CF_3, OSO_3H)

N. Basickes and **A. Sen** 197 Platinum(II) mediated oxidation of remote C—H bonds in functionalized organic molecules

P. J. Shapiro, A. Vij, G. P. A. Yap and A. L. Rheingold 203 The double insertion of *t*-butyl isocyanide by tris(tetramethylcyclopentadienyl)aluminum to form (η^1-$C_5Me_4H)_2$ Al{C(=N*t*Bu)—C(=N*t*Bu)(C_5Me_4H)}

Announcement

I Annual Polyhedron Publication Award

NUMBER 2

iii Contributors to this issue

iv Deposition of crystallographic data

H. Kozlowski, A. Lebkiri, Ch. O. Onindo, L. D. Pettit and J.-F. Galey 211 The influence of aspartic or glutamic acid residues in tetrapeptides on the formation of complexes with nickel(II) and zinc(II)

J. I. Bullock and M. Oulabi 219 Influence of steric hindrance on the formation of nine-coordinate adducts of tetrakis(thenoyltrifluoroacetonato) uranium(IV) in benzene solution

S. E. Castillo-Blum and **M. E. Sosa-Torres** 223 A new isomer of the *cis*-[Co(cyclen)Cl_2]$^+$ cation (cyclen=1,4,7,10-tetraazacyclododecane)

A. Syamala and **A. R. Chakravarty** 231 Synthesis, structure and properties of monomeric complexes obtained from the cleavage of a (μ-oxo)bis(μ-carboxylato) diruthenium(III) core

T. A. K. Al-Allaf and A. Z. M. Sheet 239 Platinum group metal Schiff base complexes—I. Platinum complexes

B. C. Ankianiec and **G. B. Young** 249 Syntheses and spectroscopic characteristics of bis-[dimethyl (aryl)silylmethyl]-platinum(II) and bis-[dimethyl(benzyl)-silylmethyl]platinum(II) complexes with diene-, nitrogen-, and phosphorus-donor ligands

Chan-Cheng Su, Shu-Pao Wu, Chiou-Yuh Wu and Tsung-Yi Chang 267 Electronic and bonding properties of acetylacetonato copper(II) complexes. Molecular structure of [Cu(acetylacetonato)(1,10-phenanthroline)($C1O_4$)(0.5CH_3CN)]

Wai-Kwok Wong, Jingwen Guan, **Qi Shen,** Lilu Zhang, Yonghua Lin and **Wing-Tak Wong** 277 Synthesis, solution dynamics and X-ray crystal structures of neodymium–ylide complexes, [($C_5H_4R)_3$NdCH_2P(Me)Ph_2] (R=H, Bu^t)

A. Singhal and **V. K. Jain** 285 Triazenido-bridged binuclear palladium(II) and platinum(II) complexes

Xin Wang, Xiao Min Zhang and Hai Xin Liu 293 Synthesis, properties and structure of vanadium(IV) Schiff base complex (VO)[Salphen]·CH_3CN

Communications

N. Hovnanian, J. Galloy and P. Miele 297 A new barium complex based on "Ba(dpm)$_2$": $Ba_6(dpm)_{10}$ $(H_2O)_6(O_2)$. An unexpected barium peroxo-β-diketonate structurally characterized

Suh-Shing Tang, Ming-Torng Sheu, Yun-Huin Lin, I-Chih Liu, **Jyh-Horung Chen** and Shin-Shin Wang — 301 — Synthesis, ^{1}H and ^{13}C NMR characterization of methyl-*meso*-tetra(4-pyridyl)-porphyrinato thallium(III): $Tl(tpyp)CH_3$

O. Lavastre, G. Bonnet, J. C. Leblanc and **C. Moise** — 307 — Niobium and tantalum phosphonato complexes by Arbuzov-like rearrangement

L. J. Farrugia, F. J. Lawlor and **N. C. Norman** — 311 — Bismuth(III) thiolates: syntheses and the structures of a neutral thiolate and a thiolato anion

G. R. Willey, L. T. Daly, M. D. Rudd and M. G. B. Drew — 315 — Azamacrocyclic complexation of bismuth(III): formation and structure of *fac*-$(BiCl_3 \cdot Me_3[9]aneN_3)$ where $Me_3[9]aneN_3$ = 1,4,7-trimethyl-1,4,7-triazacyclononane

Xiao-Ming Chen, Zhi-Tao Xu and T. C. W. Mak — 319 — Synthesis of bis(*N*-methylimidazol-2-yl)ketone (BIK) and crystal structure of $[Zn(BIK)_2](ClO_4)_2$

T. R. Belderrain, M. Paneque, M. L. Poveda, V. Sernau, **E. Carmona, E. Gutiérrez** and A. Monge — 323 — X-ray crystal structure of $[Ni\{\eta^2\text{-}C(NBu^t)CH(SiMe_3)_2\}Cl(PMe_3)]$, the first structurally characterized η^2-alkaneimidoyl complex of nickel

S. Daniele, **L. G. Hubert-Pfalzgraf** and J. Vaissermann — 327 — Water adducts of aryloxides: synthesis and molecular structure of $Pr[OC_6H_2(CH_2NMe_2)_3\text{-}2,4,6]_3(H_2O)_2$

P. S. Tanner, D. J. Burkey and **T. P. Hanusa** — 331 — Cyclopentadienyl ring metathesis with bis(pentamethylcyclopentadienyl)calcium as a route to mixed ring organolanthanide complexes; the crystal structure of $(C_5Me_5)_2Nd(C_5H_5)$

T. Adatia, N. Beynek and **B. P. Murphy** — 335 — Helical group 12 co-ordination. The X-ray crystal structure of a five-co-ordinate zinc(II) complex

Announcement

I — Annual Polyhedron Publication Award

NUMBER 3

iii — Contributors to this issue

iv — Deposition of crystallographic data

v — Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 51

A. F. Masters and J. T. Meyer — 339 — Structural systematics in nickel carbonyl cluster anions

R. Boča — 367 — Correlation curves for equatorial–axial interactions

Shu-Lin Ma, Zong-Hui Jiang, Dai-Zheng Liao, Shi-Ping Yan and **Geng-Lin Wang** — 373 — Synthesis and magnetic properties of novel oxamido heterotrinuclear complexes Cu^{II}–M^{II}–Cu^{II} (M=Mn and Cu)

D. J. Hawke, **K. J. Powell** and S. Sjöberg — 377 — A potentiometric and spectrophotometric study of the system H^+–Al^{3+}–chrome azurol S

R. Han, **G. Parkin** and **S. Trofimenko** — 387 — The tris[3-(9-anthryl)pyrazol-1-yl]hydroborato ligand, $[Tp^{Ant}]$: compositional disorder between a vacancy and a chain of three atoms

A. A. Naiini, V. Young and **J. G. Verkade** — 393 — New complexes of triethanolamine (TEA): novel structural features of $[Y(TEA)_2](ClO_4)_3 \cdot 3C_5H_5N$ and $[Cd(TEA)_2](NO_3)_2$

L.-J. Baker, C. E. F. Rickard and **M. J. Taylor** 401 Crystal structure determination and vibrational spectra of $(t\text{-}BuNH_3)_2[TeBr_6]$ and comparisons with other solids containing $[TeCl_6]^{2-}$ or $[TeBr_6]^{2-}$ ions

Hanzhang Wang, Shixi Zhao, Pu Qian, Jie Dai, Zhengbai Cao and Kaibei Yu 407 Synthesis, properties and structure of some lanthanide nitrate binuclear complex with N,N,N′,N′-tetrabutyladipamide $[Ln_2\mu\text{-}\{Bu_2NCO(CH_2)_4CONBu_2\}\{Bu_2NCO(CH_2)_4CONBu_2\}_2(NO_3)_6]$

Guizhong Qi, Yonghua Lin, Jingyu Hu and **Qi Shen** 413 Synthesis and crystal structure of a four-coordinate aryloxo samarium complex $[Sm(OAr)_3(THF)](THF)$ (OAr=2.6-ditertbutyl-4-methylphenoxo)

C. J. Carmalt, **N. C. Norman**, R. F. Pember and L. J. Farrugia 417 Synthetic and structural studies on organotransition metal–indium thiocyanate complexes

C. Díaz and C. Leal 425 *Cis–trans* isomeric influence on the reactivity of $BrMn(CO)_2dppmP(OPh)_3$ towards dialkylthioethers

I. Cavaco, **J. C. Pessoa**, S. M. Luz, M. T. Duarte, P. M. Matias, R. T. Henriques and **R. D. Gillard** 429 N-Salicylideneamino-acidate complexes of oxovanadium (IV)—II. Synthesis, characterization and deamination of an N-salicylideneglycylglycinato complex

Ping-Rong Wei, Lu Jia, Chang-Rang Liu, Qiang Han, Ge-Chen Wei and Song Gao 441 A binuclear nickel(II) complex containing an oxamido-bridge: synthesis, properties and X-ray crystal structure of $[Ni(oxae)Ni(phen)_2](ClO_4)_2\cdot 3H_2O$

Li Han, Wang Jun-Qiao and Chen Ji-Zhou 445 Structure imperfection of $\gamma\text{-}Al_2O_3$

Communications

G. Annibale, M. Brandolisio and B. Pitteri 451 New routes for the synthesis of chloro(diethylenetriamine) platinum(II)chloride and chloro(2,2′:6′,2″-terpyridine)platinum (II)chloride dihydrate

A. Lehtonen and R. Sillanpää 455 A new synthetic route to *cis*-dichlorobisdiolatotungsten(VI) complexes

S. McConnell, M. Motevalli and **P. Thornton** 459 Synthesis and structure of a sodium complex of a hexanuclear cobalt(II) hydroxypyridine derivative

463 Erratum

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 4

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 52

M. J. Went 465 Multidentate ligands bound via alkyne and group 15 or 16 donor sites

---

Jing-Lin Zuo, Tian-Ming Yao, Xue-Xiang Xu, **Xiao-Zeng You** and Xiao-Ying Huang 483 Synthesis, crystal structure and properties of 2-[*p*-dimethylaminostyryl]pyridylmethyl bis[6,7-dihydro-5H-1,4-dithiepindithiolato]nickelate(III)

R. Kapoor, V. Sood and P. Kapoor 489 The synthesis and IR and NMR (^{1}H, ^{13}C and ^{119}Sn) spectral studies of some methyltin(IV) sulphonates

A. Das, H. C. Bajaj, K. Venkatasubramanian✠ and M. M. Bhadbhade 495 Unusual coordination of tripodal NN_3S_3 donor ligand with nickel(II): single crystal X-ray structure of $[Ni\{H_2NCH_2CH_2N(CH_2CH_2N{=}CH(C_4H_3S))_2\}(CH_3CN)(H_2O)](PF_6)_2$

A. B. Burdukov, **V. I. Ovcharenko,** R. Z. Sagdeev, A. V. Podoplelov, N. V. Pervukhina, V. N. Ikorskii, I. A. Kiriluk and I. A. Grigoriev 501 Two $Cu(hfac)_2$ complexes with the imidazoline nitroxide 4-amido-2,2-dimethyl-5,5-dimethoxy-3-imidazoline-1-oxyl. Conversion of a discrete molecular structure to a chain structure as a result of stoichiometric changes

Luqin Yang and Rudong Yang 507 Synthesis and crystal structure of the dinuclear complex of 1,5-bis(1′-phenyl-3′-methyl-5′-pyrazolone-4′)-1,5-pentanedione with samarium

Li Xiaozeng, Wang Genglin, Liao Daizheng, Yan Shiping, Jiang Zonghui, Wang Honggen and Yao Xinkan 511 Synthesis and crystal structure of a binuclear zinc(II) complex of 2,6-diformylpyridine *N*-oxide bis(benzoylhydrazone)

E. W. Abel, D. H. Goldsworthy, P. J. Heard and **K. Kite** 515 Formation of dimethylamine complexes of trimethylplatinum (IV) from reactions with *N,N,N′,N′*-tetramethyldiaminomethane

N. V. Gerbeleu, S. S. Palanciuc, Yu. A. Simonov, A. A. Dvorkin, P. N. Bourosh, M. T. Reetz, **V. B. Arion** and K. Töllner 521 Nickel(II) and copper(II) complexes with amidrazone-based ligands: structure and catalytic activity

I. R. Butler, S. J. McDonald, M. B. Hursthouse and K. M. A. Malik 529 Ferrocenylpyridines: a new synthesis of 4′-ferrocenylterpyridine and the single crystal structure of a C_3-ferrocenophane, $[(\eta\text{-}C_5H_4CHCH_2C(O)2\text{-}C_5H_4N)_2CHC(O)2\text{-}C_5H_4N]Fe$

L. J. Farrugia, N. M. MacDonald, **R. D. Peacock** and J. Robb 541 Synthesis, X-ray crystal structure and spectroscopy of the hydrogen-bridged dimer $[Cr^{III}(L \cdot H_3L)Cr^{III}][PF_6]_3$ (H_3L = *N,N′,N″*-tris[(2*S*)-2-hydroxypropyl]-1,4,7-triazacyclononane)

M. P. C. Mason, J. I. Sachinidis, **P. A. Tregloan** and **A. F. Masters** 547 Kinetic and rapid scan spectrophotometric studies of the oligomerization of ethene and propene using the catalytic system $[Ni(sacsac)P(n\text{-}butyl)_3Cl]/AlEt_2Cl$

J. O. Dzięgielewski, K. Filipek and B. Machura 555 Preparation and spectroscopic characterization of $[Re(NO)_2X_2L_2]$ (X = Cl, Br, I; L_2 = $2PPh_3$, dppe). Application of $[Re(NO)_2Br_2L_2]$ in oxidation of olefins

Ma Jian-Fang, Jin Zhong-Sheng and Ni Jia-Zuan 563 Structure of aquabis-(picolinato)scandium hydroxide dihydrate

Communication

S. W. A. Bligh, A. H. M. S. Chowdhury, M. McPartlin, I. J. Scowen and R. A. Bulman 567 Neutral gadolinium(III) complexes of bulky octadentate dtpa derivatives as potential contrast agents for magnetic resonance imaging

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 5

iii Contributors to this issue

iv Deposition of crystallographic data

A. Dvorkin, P. Bourosh, Y. Simonov, **V. Arion,** J. Gradinaru and N. Gerbeleu — 571 — The crystal structures of [6-nitro-12,14-dimethyl-3,9-bis-(propylsulphonyl)-1,2,4,8,10,11-hexaazacyclotetra-deca-2,4,6,9,12,14-hexaenato(2-)-N^1, N^4, N^8, N^{11}]nickel(II) and [12,14-dimethyl-3,9-bis(ethylsulphonyl)-1,2,4,8,10,11-hexa-azacyclotetra-deca-2,4,6,9,12,14-hexaenato(2-)-N^1, N^4, N^8, N^{11}]nickel(II)

J. Valdés-Martínez, R. A. Toscano and J. Ramirez-Ortíz — 579 — Synthesis, crystal and molecular structure of 2-methyl-thiosemicarbazide copper(II) nitrate, $[Cu(2MeTSC)_2(NO_3)_2]$

E. W. Abel, **K. G. Orrell,** M. C. Poole, V. Šik, M. B. Hursthouse and M. A. Mazid — 585 — Conformational studies of transition metal carbonyl complexes of 1,5-dithiacyclooctane (1,5-DTCO) and crystal structure of $[ReCl(CO)_3(1,5\text{-DTCO})]$

J. C. Jeffery, C. S. G. Moore, E. Psillakis, **M. D. Ward** and P. Thornton — 599 — The coordination chemistry of mixed pyridine–phenol and phenanthroline–phenol ligands; the crystal structure of 2-(2-hydroxyphenyl)-1,10-phenanthroline (HL) and the crystal structure and properties of $[FeL_2][PF_6]$

B. Foretić, **N. Burger** and V. Hankonyi — 605 — Reactions of the aquapentacyanoferrate(II) ion with 2-nitroso-1-naphthol and 2-nitroso-1-naphthol-4-sulphonic acid

J. M. Salas, M. Quirós, M. A. Romero M. P. Sánchez, M. A. Salas and R. Vilaplana — 611 — Metal complexes of theophylline-7-acetic acid. Crystal structure of a nickel(II) compound containing non-coordinated theophylline-7-acetate ion

M. G. B. Drew, P. K. Baker, E. M. Armstrong, S. G. Fraser, D. J. Muldoon, **A. J. Lavery** and A. Shawcross — 617 — Solid state structures and ^{13}C NMR spectra of the seven-coordinate complexes $[WI_2(CO)_3(NCR)_2]$ (R=Me or Et)

S. Sogani, **A. Singh** and R. C. Mehrotra — 621 — Synthesis and characterization of nonaisopropoxodistannato complexes of magnesium(II), barium(II), zinc(II) and cadmium(II)

Ruo-Hua Zhang, Xiong-Yu Wu, Fen-Zhi Zhao and Ya-Li Zhan — 629 — Synthesis and characterization of mixed ligand complexes of yttrium and lanthanide(III)–bis(phenylsulphinyl)propane and bipyridyl

L. Matilainen, M. Klinga and M. Leskelä — 635 — Synthesis and X-ray crystal structure of di-μ-(2,6-di-*tert*-butylphenoxo)di-lithium bis-dimethylsulphoxide solvate, $C_{32}H_{54}Li_2O_4S_2$. Comparison of the structure with other dimeric lithium alkoxides

Ming Li, Jiang-Zhong Zou, **Zheng Xu,** Xiao-Zeng You and Xiao-Yin Huang — 639 — X-ray crystal structure, spectral and magnetic properties of a mixed-ligand dinuclear complex $[Cu(Phen)(Sa)(ClO_4)]_2$

T. Nyokong — 643 — The reaction of cyanide with iron(II) hexadecachloro-phthalocyanine

L. Escriche, N. Lucena, **J. Casabó, F. Teixidor,** R. Kivekäs and R. Sillanpää — 649 — Synthesis and crystal structure of bis[(7,9-diaza-3,14-dithiatetracycle[15,4,0,$0^{4,5}0^{13,14}$]nonacosa-1(17),18,20,4(22),23,25,13(26),27,29-nonaene)chlorocopper(II)] tetrachlorodicuprate(I) bismethanol. Atypical non-planar conformation of the $[Cu_2Cl_4]^{2-}$ anion

G. Mohamed, S. A. Salam, **S. Oumar,** U. Russo and V. Maurizio — 655 — Template synthesis and characterization of mononuclear (La, Yb), homobinuclear (Ce, Eu) and heterobinuclear (La/Sn) complexes with an acyclic lipophylic Schiff base derived from 2,6-diformyl-4-methylphenol

E. Labisbal, J. A. Garcia-Vazquez, J. Romero, S. Picos, **A. Sousa,** A. Castiñeiras and C. Maichle-Mössmer — 663 — Electrochemical synthesis and structural characterization of nickel(II) and copper(II) complexes of tridentate Schiff bases: molecular structure of the five-coordinated copper(II) complex: 1,10-phenanthroline{2-[(2-oxyphenyl)iminomethyl] phenolato}copper(II)

R. A. El-Zaru and H. A. Hodali 671 The oxidation of *o*-benzoquinone dioxime by $[Fe(CN)_6]^{3-}$ and the evaluation of oxime K_{a1}

A. R. Dias, M. T. Duarte, A. M. Galvão, M. H. Garcia M. M. Marques, M. S. Salema, D. Masi and C. Mealli 675 Uracil and thiouracil complexes of dicyclopentadienyl molybdenum and tungsten: preparation and electrochemistry. The structures of $[M(\eta^5\text{-}C_5H_5)_2(2\text{-}SN_2OC_4H_3)][PF_6]$, $[M(\eta^5\text{-}C_5H_5)_2\{2\text{-}S(CH_3)N_2OC_4H_2\}][PF_6]$, $[Mo(\eta^5\text{-}C_5H_5)_2(4\text{-}SN_2OC_4H_3)][PF_6]$ and $[Mo(\eta^5\text{-}C_5H_5)_2\{4\text{-}S(CH_3)N_2OC_4H_2\}][PF_6]$ (M=Mo and W)

Deng-Hai Chen and **Hung-Cheh Chiang** 687 Chemical specific cycloaddition of diethanolamine to germanium dioxide

K. Ragunathan and **P. K. Bharadwaj** 693 Homo-dinuclear hexadentate copper(II) and nickel(II) cryptates: synthesis, spectroscopic and electrochemical characterization of the perchlorate salts

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 6

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 53

M. J. Hampden-Smith and **T. T. Kodas** 699 Chemical vapour deposition of copper from (hfac)CuL compounds

---

A. Dhammani, **R. Bohra** and R. C. Mehrotra 733 Synthesis and characterization of some unique heterocyclic derivatives containing aluminium atoms in four- and six-coordination states—I. Bis(acetylacetonato)aluminium(III)-di-μ-isopropoxo-glycolato aluminium

J. Diez, M. P. Gamasa and **J. Gimeno** 741 Synthesis and characterization of novel triangular copper(I) complexes containing the trinuclear moiety $Cu_3(\mu\text{-dppm})_3$ (dppm=bis(diphenylphosphino)methane) and triply bridging alkoxide and thiolate ligands

R. Cea-Olivares, V. Lomeli, S. Hernández-Ortega and **I. Haiduc** 747 Crystal and molecular structures of spiro-bis(trithiastannocane), $Sn(SCH_2CH_2SCH_2CH_2S)_2$, and spiro-bis(oxadithiastannocane), $Sn(SCH_2CH_2OCH_2CH_2S)_2$. Distortion of the SnS_4 tetrahedral coordination produced by transannular Sn···X (X=S, O) interactions

R. D. Gillard and M. M. Shoukry 757 Optically active coordination compounds—51. The circular dichroism of *fac*-tris-(*S*-alaninato)rhodium(III)

A. P. Purdy and C. F. George 761 Structure and properties of heterometallic alkoxides containing copper(I)

J.-P. Costes, J.-B. Tommasino, B. Carré, F. Soulet and **P.-L. Fabre** 771 Electrochemical studies of iron(III) Schiff base complexes—II. Dimeric μ-oxo$[Fe^{III}(N_2O_2)]_2O$ complexes

Shin-Geol Kang, Mi-Seon Kim, Jang-Sik Choi and Moon Hwan Cho 781 Synthesis, characterization and properties of new fully N-alkylated 14-membered tetraaza macrocycles and their copper(II) complexes

W. Oberhauser, C. Bachmann and **P. Brüggeller** 787 Pd^{II} and Pt^{II} complexes containing 1,1,4,7,10,10-hexaphenyl-1,4,7,10-tetraphosphadecane: first X-ray structure of a Pd-tetraphos complex

C. Pettinari, G. Gioia Lobbia, A. Lorenzotti and A. Cingolani 793 Synthesis, characterization and reactivity of coordination compounds of group 12 metals containing the N_2-donor ligand bis(3,4,5-trimethylpyrazol-1-yl)methane

J. S. Casas, A. Castiñeiras, **I. Haiduc,** A. Sánchez, J. Sordo and E. M. Vázquez-López 805 Crystal and molecular structure of diphenylthallium(III) tetraphenyldithioimidodiphosphinate, $[TlPh_2\{(SPPh_2)_2N\}]$, containing a new inorganic (carbon-free) TlS_2P_2N metallocycle

Keum Yoon and **G. Parkin** 811 Tris(3-t-butyl-5-methylpyrazolyl)hydroborato derivatives of copper and thallium: the structural influence of a 5-methyl substituent

Communication

J. R. Hariharan, I. M. Wyzlic and **A. H. Soloway** 823 Synthesis of novel boron-containing polyamines—agents for DNA targeting in neutron capture therapy

827 Corrigendum

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 7

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 54

J. K. Beattie, A. F. Masters and J. T. Meyer 829 Nickel carbonyl cluster complexes

---

R. W. Hay and Chen You-Quan 869 The copper(II)–2,2′-dipyridylamine promoted hydrolysis of glycine ethyl ester. Kinetic evidence for intramolecular attack by coordinated hydroxide

P. D. Beer and S. E. Stokes 873 Anion recognition by amide-linked pyridyl and pyridinium substituted cobalticinium receptors

F. Labrize and **L. G. Hubert-Pfalzgraf** 881 Synthesis, characterization and reactivity of volatile yttrium–sodium fluoroisopropoxide derivatives. Retention of sodium as a general feature

Wang Bo, Yang Shiyan, Ma Hongzhu and Feng Dianzhong 889 Synthesis and characterization of some novel hexa-coordinated mixed-ligand complexes of lanthanides with 4-(3,5-diphenyl-2-pyrazolin-1-yl)benzenesulphonic acid

Wang Bo, Liu Jinxia, Yang Shiyan and Jin Daosen 895 Studies of complexes of lanthanide(III) with benzoin

H.-C. Böttcher, A. Krug and **H. Hartung** 901 Synthesis and X-ray crystal structure of $[Fe_2(CO)_5(\mu\text{-}PBu^t_2)(\mu\text{-}PCy_2)(dppm\text{-}P)]$: a complex containing dppm [dppm=bis(diphenylphosphino)methane] in the rare monodentate coordination

T. S. Lobana and R. Singh 907 Chemistry of pyridinethiols and related ligands—4. Complexes of bis(pyridine-2-thiolato- or 1-oxopyridine-2-thione)ruthenium (II) with bis(diphenylphosphino)alkanes

A. L. Hector and **I. P. Parkin** 913 Sodium azide as a reagent for solid state metathesis preparations of refractory metal nitrides

S. Mandal, **P. K. Bharadwaj,** Zhong-Yuan Zhou and **T. C. W. Mak** 919 A hexadentate nickel(II) complex with a tripodal ligand bearing S_3N_3 donors: synthesis, spectroscopic and X-ray crystal structural investigation

J. C. Bao, **P. X. Shao,** R. J. Wang, H. G. Wang and X. K. Yao 927 Stereochemistry and crystal structure of diphenyltin dichloride complexes with *meso-* or *rac*-bis(phenylsulphinyl)ethane

A. J. Downs, L. A. Harman, P. D. P. Thomas and C. R. Pulham 935 Hydridogallium bis(tetrahydroborate), $HGa(BH_4)_2$: synthesis and properties

Hong-Ye Sun, **Chun-Hui Huang,** Guang-Xian Xu, Zhe-Sheng Ma and Ni-Cheng Shi 947 Studies on a new type of terbium complex with sulphonated catecholate. The molecular structure and fluorescence properties of $[Tb_2(C_6H_3S_2O_8)_2 \cdot 6DMF]_n$

Communications

T. Ben-Hadda, C. Mountassir and **H. Le Bozec** 953 Ruthenium(II) complexes containing the tridentate ligand 4,4′,4″-tri-tert-butyl-terpyridine: synthesis and isomerisation study of *trans*-(trpy*)$RuCl_2$(L) [L=CO, PR_3, $P(OR)_3$]

A. S. Abd-El-Aziz and K. M. Epp 957 The first example of multiple oxidation reactions of η^6-alkylated aniline-η^5-cyclopentadienyliron complexes

D. J. Donohoe, **D. Reed** and A. J. Welch 961 The application of TOCSY to boron chemistry

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 8

iii Contributors to this issue

iv Deposition of crystallographic data

W. Levason and R. D. Oldroyd 967 The tris(tellurato)manganate(IV) anion: spectroscopic and structural studies of $Na_7K[Mn\{TeO_4(OH)_2\}_3] \cdot 3H_2O$

S. Donald, K. Terrell, **J. B. Vincent** and K. D. Robinson 971 Modelling chromium biochemistry: synthesis and characterization of $[NEt_3H][Cr^{III}_4O_2(O_2CPh)_7(pic)_2] \cdot CH_2Cl_2$ (Hpic=picolinic acid)

K. R. J. Thomas, P. Tharmaraj, **V. Chandrasekhar,** S. R. Scott and **A. W. Cordes** 977 Five-coordinate copper(II) complexes of gem-$N_3P_3Ph_2(dmpz)_4$

M. Petrič, I. Leban and P. Šegedin 983 Preparation and characterization of copper(II) coordination compounds with linear chain fatty acids with 7–12 carbon atoms and pyridine. Crystal structure of $Cu(O_2CC_8H_{17})_2(py)_2(H_2O)$

P. Kopel, F. Březina, Z. Trávníček, Z. Šindelář, J. Lasovský and J. Marek 991 Nickel complexes with sulphur and nitrogen donor ligands, crystal and molecular structure of $[(PPh_3)_2Cu(DTA)Ni(DTA)Cu(PPh_3)_2]$ (H_2DTA = dithiooxamide)

H. Yoshida, T. Ozawa, K. Jitsukawa and **H. Einaga** 997 Kinetics and mechanism of complex formation reaction of iron(II) with 4-methyl-8-di(carboxymethyl)aminomethyl umbelliferrone: role of the fourth chelating group in tripodal (NO_3)-type tetradentate ligand structure on the stabilization of the iron(II) complex

T. Kuroda-Sowa, M. Munakata, M. Miyazaki and M. Maekawa	1003	Syntheses and structures of tetranuclear and hexanuclear copper(I) complexes with iminomethanethiolato bridges derived from isothiocyanate
M. H. Zaghal and B. F. Ali	1011	Substitution reactions of *cis*-dichlorobis(2,2′-biquinoline) rhodium(III) chloride
Kewu Yang, **Yuanqi Yin** and Daosin Jin	1021	An active site model for carbonic anhydrase. Synthesis and crystal structure of $[\eta^3$-HB(3-Phpz)$_3]$ZnBr
M. Tonković and H. Bilinski	1025	Glucose and glucuronic acid interactions with hydrolysed aluminium(III)
D. H. F. Souza, G. Oliva, A. Teixeira and **A. A. Batista**	1031	The structure of the nitrosyl $[RuCl_3(NO)(AsPh_3)_2]$ complex
M. Nonoyama, K. Nakajima and M. Kita	1035	Cyclometallation of *N,N*-dimethyl-2-bromothiobenzamide and some related thioamides with palladium(0) and palladium(II)
M. Cindrić, **B. Kamenar,** N. Strukan and Z. Veksli	1045	Synthesis, structure and ESR spectrum of $(Hmorph)_6[V^{IV},V^V,Mo_{10})VO_{40}]\cdot 3H_2O$
Siang-Guan Teoh, Guan-Yeow Yeap, Soon-Beng Teo and Hoong-Kun Fun	1051	Syntheses and spectroscopic studies of inorganic tin and organotin derivatives of 1-[(4-methylphenylimino)methyl]-2-naphthol. Crystal structure of chlorotrimethyl{1-[(4-methylphenylimino) methyl]-2-naphthol}tin(IV)
S. J. Chadwell, S. J. Coles, **P. G. Edwards,** M. B. Hursthouse and A. Imran	1057	Synthesis and characterization of group 10 metal complexes with a new trifunctional ether phosphine. The X-ray crystal structures of bis[bis(2-ethoxyethyl)benzylphosphine]dichloronickel(II) and bis[bis(2-ethoxyethyl)benzylphosphine]chlorophenylnickel(II)
I. Haiduc, R. Cea-Olivares, R. A. Toscano and C. Silvestru	1067	X-ray crystal structure of (tetraphenyldithioimidodiphosphinato) (triphenylphosphine)copper(I), $(Ph_3P)Cu(SPPh_2)_2N$, a monocyclic inorganic (carbon-free) chelate ring compound
S. P. Perlepes, J. C. Huffman, **G. Christou** and S. Paschalidou	1073	Dinuclear copper(II) complexes with the new $[Cu_2(\mu$-OR)$(\mu$-OAc$)_2]^+$ (R=alkyl) core: preparation and characterization of $[Cu_2(OR)(OAc)_2(bpy)_2]^+$ (R=Me, Et, Pr^n) salts
Yuan-Ming Zhang, Hua-Kuang Lin, Yun-Ti Chen and **R. K. Murmann**	1083	A kinetic study of the reaction of a quasi-aromatic platinum(II) complex with aromatic aldehydes
P. Román, J. I. Beitia, A. Luque and C. Guzmán-Miralles	1091	Tetraphenylphosphonium 1,2-dithiooxalato-S,S′ complexes of nickel(II), palladium(II) and platinum(II). Synthesis, chemical characterization, spectroscopic and X-ray studies, and thermochemistry
Shiaw-Pyng Wey, A. M. Ibrahim, **M. A. Green** and P. E. Fanwick	1097	Synthesis and crystal structure of a copper(II) complex with a tetradentate dithiadioxime ligand
		Communications
Li-Cheng Song, Ji-Quan Wang and Qing-Mei Hu	1101	The first $Mo_2Fe_2S_2$ cluster compound with functionally substituted cyclopentadienyl ligand. Synthesis and crystal structure of $(\eta^5$-$MeO_2CC_5H_4)_2(\mu_3$-CO$)_2Mo_2Fe_2(\mu_3$-S$)_2$(CO$)_6$
V.-C. Arunasalam, **D. M. P. Mingos,** J. C. Plakatouras, I. Baxter, **M. B. Hursthouse** and K. M. A. Malik	1105	Carbonyl sulfide insertion reactions into metal–alkoxide bonds. Synthesis and molecular structure of di[bis(methylthiocarbonato) tris(methanol)calcium]
Wai-Kwok Wong, Tao Jiang, D. W. J. Kwong and **Wing-Tak Wong**	1109	Synthesis and X-ray crystal structure of $(cis$-$PdCl_2)_2[(Ph_2PNH)(NH)CC_6H_4C(NH)(NHPPh_2)]\cdot 6$DMF

F. J. Berry and M. Vithal 1113 New compounds with NASICON-related structures of the type $NaM'M''P_3O_{12}$ (M′=Nb, Sb; M″=Al, Ga, In, Fe)

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 9

iii Contributors to this issue

iv Deposition of crystallographic data

M. Shakir and S. P. Varkey 1117 A new synthetic route for the preparation of a new series of 14–22-membered tetraoxomacrocyclic tetraamines and their transition metal complexes

D. A. Morgenstern, C. C. Bonham, A. P. Rothwell, K. V. Wood and **C. P. Kubiak** 1129 Trinuclear nickel clusters, $[Ni_3(\mu_3\text{-}L)(\mu_3\text{-}I)(\mu_2\text{-}dppm)_3]^{n+}$ (L=I^-, CO, $CNCH_3$, CN-2,6-$Me_2C_6H_3$, CN-i-C_3H_7, CN-t-C_4H_9, CN-n-C_4H_9, NO^+) and the "dimer of trimer" hexanuclear nickel clusters $\{[Ni_3(\mu_3\text{-}I)(\mu_2\text{-}dppm)_3]_2(\mu_3,\mu_3,\eta^1,\eta^{1'}\text{-}CN\text{-}R\text{-}NC)\}^{2+}$, (R = -$(CH_2)_6$-, p-$C_6H_4$): characterization of large clusters by mass spectrometry

M. Cano, J. A. Campo, J. V. Heras, J. Lafuente, C. Rivas and E. Pinilla 1139 Bulky pyrazole as ligands in rhodium(I) complexes. Crystal structure of chlorodicarbonyl(3-*p*-methoxyphenylpyrazole) rhodium(I)

K. B. Anderson, R. A. Franich, H. W. Kroese, R. Meder and **C. E. F. Rickard** 1149 The structure of biguanide complexes of boron

A. Garoufis, M. Louloudi, S. Kasselouri, J. Hatiris and **N. Hadjiliadis** 1155 Ternary complexes of copper(II) containing inosine (Ino), guanosine (Guo) and the dipeptides, Gly–Gly, Gly–L-Ala, Gly–L-Val and Gly–L-Leu

S. Dutta, S. Mondal and **A. Chakravorty** 1163 Chemistry of VO^{3+} and VO^{2+} complexes incorporating N-salicylidene-α-aminoacidates

K. C. Molloy, M. F. Mahon, **I. Haiduc** and C. Silvestru 1169 Solid state supramolecular structure of (tetraphenyldithio-imidodiphosphinato)trimethyltin(IV) · benzene, $[Me_3Sn(SPPh_2)_2N \cdot C_6H_6]_\infty$, a unique polymer containing a bridging —SPR_2NPR_2S— ligand

A. Silvestru, **I. Haiduc,** H. J. Breunig and K. H. Ebert 1175 Diphenyltellurium(IV) bis(diorganophosphinodithioates). X-ray crystal structure of $Ph_2Te(S_2PPh_2)_2 \cdot 0.5CHCl_3$ and a multinuclear NMR study of the decomposition process of $Ph_2Te(S_2PR_2)_2$ to Ph_2Te^{II} and $[R_2P(S)S]_2$

G. Plesch, C. Friebel, O. Švajlenová and J. Krätsmár-Šmogrovič 1185 Coordination geometries and cooperative ordering effects in copper(II) complexes with tridentate Schiff base dianions—III. EPR study on N-salicylideneglycinatocopper(II) complexes with thiourea derivatives

Xiao-Ming Chen, Yu-Xin Yao, Zhi-Tao Xu, Kai-Liang Shi and Yong-Jin Xu 1195 Synthesis and crystal structures of two dichloro-bridged dimeric metal complexes of 1,4,7-triazacyclodecane: $[Zn_2(tacd)_2Cl_2](ClO_4)_2$ and $[Cu_2(tacd)_2Cl_2](ClO_4)_2$

Hong-Ye Sun, **Chun-Hui Huang,** Xiang-Lin Jin and Guang-Xian Xu 1201 The synthesis, crystal structure and synergistic fluorescence effect of a heteronuclear lanthanide complex (HLC) $\{Na_3TbLa_2(C_7H_3SO_6)_4 \cdot 26H_2O\}_n$

L. F. Sala, L. Ciullo, R. Lafarga and S. Signorella 1207 Kinetics and mechanism of the oxidation of D-galactose by copper(II) in acidic medium

F. Fagalde and **N. E. Katz** 1213 Distance dependence of intramolecular electron transfer parameters in mixed-valence asymmetric complexes of ruthenium

N. N. Das and **A. C. Dash** 1221 Synthesis, characterization and electrochemistry of a binuclear copper(II) complex of Schiff base derived from 2-aminomethyl-benzimidazole and salicylaldehyde

J.-P. Damiano, V. Munyejabo and **M. Postel** 1229 Oxygen transfer from iron nitrates in the presence of 2-(diphenylphosphine oxide)pyridine ($OPPh_2py$). Molecular structure of $Fe(NO_3)_2Cl(OPPh_2py)\cdot CH_2Cl_2$

Ming-Xing Li, **Gao-Yang Xie,** Yi-Dong Gu, Jan Chen and Pei-Ju Zheng 1235 Synthesis, characterization and magnetic properties of one-dimensional 4,4′-bipyridine-bridged manganese(II) complex: crystal structure of $[Mn(\mu\text{-}4,4'\text{-bipy})(4,4'\text{-bipy})(NCS)_2(H_2O)_2]_n$

Suh-Shing Tang, Yun-Huin Lin, Ming-Torng Sheu, Chu-Chieh Lin, **Jyh-Horung Chen** and Shin-Shin Wang 1241 Molecular structure of meso-tetra(4-pyridyl)porphyrinato-thallium(III) acetate, Tl(tpyp)(OAc)

R. W. Hay, B. Kinsman and C. I. Smith 1245 The chemistry of nickel(II) complexes of 1,4,7,11-tetra-azacyclotetradecane (isocyclam)

Communications

P. G. Veltsistas, P. D. Christos, M. I. Karayannis, A. M. Z. Slawin, **J. D. Woollins** and D. J. Williams 1251 Synthesis and X-ray structure of an (oxamato)praseodymium polymer, $[Pr(HNCOCO_2)_{1.5}(H_2O)_3]_n\cdot 2.75H_2O$

A. J. Nielson, P. D. W. Boyd, G. R. Clark, P. A. Hunt, J. B. Metson, C. E. F. Rickard and P. Schwerdtfeger 1255 A d^0 to d^2 transformation of tungsten, promoted by formation of an organoimido ligand and involving disruption of the π-perpendicular bonding component of co-ordinated diphenyl-acetylene

Announcements

I Annual Polyhedron Publication Award

II Fourth Polyhedron Prize for Creativity in Inorganic Chemistry

NUMBER 10

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Reports

POLYHEDRON REPORT NUMBER 55

B. J. Brisdon and R. A. Walton 1259 Transition metal butadienyl complexes

M. Shakir, A. K. Mohamed, S. P. Varkey, O. S. M. Nasman and Z. A. Siddiqi 1277 Preparation and structural characterization of 14–16-membered pendent arm macrocyclic complexes of transition metal ions

M. Shakir, S. P. Varkey and O. S. M. Nasman 1283 Transition metal complexes of 20–22-membered octaazamacrocycles: synthesis and characterization

M. Shakir, P. S. Hameed, F. Firdaus and S. P. Varkey 1289 Organotellurium(IV) derivatives: synthesis and characterization of metal dialkyltetrakis(chlorosulphato)tellurate(IV), $M_2[R_2Te(SO_3Cl)_4]$ (M=Na, K) and $Sn[R_2Te(SO_3Cl)_4]$ (R=CH_3, C_2H_5, n-C_3H_7, n-C_4H_9)

W. Caetano, J. J. F. Alves, **B. S. Lima Neto** and D. W. Franco 1295 The competition for ruthenium(II) between phosphorus(III) and nitrogen(III) binding sites in 2-cyanoethyldiphenylphosphine

Ki-Young Choi, Dong Won Kim and Choon Pyo Hong 1299 Kinetics of formation and dissociation of triaza-crown-alkanoic acid complexes of cerium(III) and europium(III)

A. Neves, M. A. De Brito, G. Oliva, O. R. Nascimento, E. H. Panepucci, D. H. F. Souza and **A. A. Batista** 1307 Synthesis, crystal structure, electrochemical and spectroscopic properties of $[Ru(BBPEN)][PF_6]\cdot H_2O$. Crystal structure of the H_2BBPEN [H_2BBPEN=*N,N'*-bis(2-hydroxybenzyl)-*N,N'*-bis 2(methylpyridyl)ethylenediamine]

Ming Zhao and **B. M. Gimarc** 1315 Three-dimensional Hückel molecular orbital energy level correlation diagrams for polyhedral rearrangements

P. D. Beer, J. P. Danks and D. Hesek 1327 Synthesis, coordination and redox properties of a novel tetrathiafulvalene tetra(benzo-15-crown-5)ether ligand

L. G. Lavrenova, N. G. Yudina, V. N. Ikorskii, V. A. Varnek, I. M. Oglezneva and S. V. Larionov 1333 Spin-crossover and thermochromism in complexes of iron(II) iodide and thiocyanate with 4-amino-1,2,4-triazole

J. C. Gordon, S. P. Mattamana, **R. Poli** and P. E. Fanwick 1339 Crystal structure of base-free $[MoOL_4]^-$

X. Gan, **M. Munakata,** T. Kuroda-Sowa, M. Maekawa and Y. Misaki 1343 Syntheses and structures of one- and two-dimensional copper(I) coordination polymers with tetrakis(ethylthio)tetrathiafulvalene (TTC_2-TTF) and the properties of their iodine-doped compounds

R. C. Maurya, D. D. Mishra, S. Mukherjee and J. Dubey 1351 Metal cyanonitrosyl complexes: synthesis, magnetic and spectral studies of some novel mixed-ligand cyanonitrosyl $\{CoNo\}_8$ complexes of cobalt(I) with heterocyclic bases

K. Nomiya, K.-I. Onoue, Y. Kondoh, N. C. Kasuga, H. Nagano, M. Oda and S. Sakuma 1359 Synthesis and characterization of oligomeric, anionic thiomalato–silver(I) complexes with biological activities

Fung-E Hong, Yuan-Terng Chang, I-Ren Lue and Chu-Chieh Lin 1369 Preparation and structure of (η^5-cyclopentadienyl)(η^4-tetraphenylcyclobutadiene)cobalt coordinated by three $Cr(CO)_3$ units at the phenyl rings

J. O. Dzięgielewski, R. Gil-Bortnowska, J. Mrzigod and J. G. Małecki 1375 Hydride complexes of tungsten in photocatalytic dinitrogen reduction

Xiao-Yan Zhang, **M. T. Pope,** M. R. Chance and G. B. Jameson 1381 High-valent manganese in polyoxotungstates—1. Manganese(IV) Keggin derivatives

Communications

K. Kasuga, H. Hayashi, H. Miyasaka, M. Handa and M. Dairaku 1393 Preparation and photocatalytic properties of an amphiphilic phthalocyaninatosilicon(IV) complex having methoxo ligands at its axial positions

N. Gálvez, **M. Moreno-Mañas,** I. Padrós, R. Mª Sebastián, N. Serra and **A. Vallribera** 1397 Preparation of transition metal complexes of chiral derivatives of acetoacetic acid. Tetraalkylammonium tetrachlorometallates as an organic source of metals

G. D. Forster and **G. Hogarth** 1401 Synthesis and structural characterisation of the dimeric tetraimido complex $[Mo(N\text{-}o\text{-tolyl})(\eta^2\text{-}S_2CNEt_2)(\mu\text{-N-}o\text{-tolyl})]_2$

Announcement

I Annual Polyhedron Publication Award

NUMBER 11

iii Contributors to this issue

iv Deposition of crystallographic data

C. J. Carmalt, **N. C. Norman** and L. J. Farrugia — 1405 — Octahedral coordination complexes of tellurium tetrachloride

M. Rowley, J. W. Steed and **D. A. Tocher** — 1415 — A selenocyanate derivative of an allyl ruthenium(IV) compound

I-Ren Lue, Shih-Chun Lo, Chu-Chieh Lin and **Fung-E Hong** — 1419 — Preparation and crystallographic characterization of [MoCo $(CO)_5(PPh_3)_2(\eta^5\text{-}C_5H_5)$]

B. Wrackmeyer, U. Dörfler, W. Milius and **M. Herberhold** — 1425 — Metal–boron interactions in boron-substituted ferrocenes, ruthenocenes and osmocenes

M. J. Almond, M. G. B. Drew, F. Sarikahya and O. S. Senturk — 1433 — Photochemical synthesis and crystal structure of dimethylphosphinodithiatomanganese(I) tetracarbonyl, $[Mn(CO)_4(S_2PMe_2)]$

M. A. S. Goher and **F. A. Mautner** — 1439 — New unexpected coordination modes of azide and picolinato anions acting as bridging ligands between copper(II) and sodium or potassium ions. Synthesis, crystal structures and spectral characterizations of $[MCu(picolinato)(N_3)_2]_n$ (M=Na or K) complexes

Soon-Beng Teo, Siang-Guan Teoh, Chew-Hee Ng, Hoong-Kun Fun and J.-P. Declercq — 1447 — Novel *N,N′*-methylene-bridged metal(II) complexes of *N,N′*-methylenedi(4-hydroxy-L-proline) obtained from the condensation of bis(4-hydroxy-L-prolinato)metal(II) with formaldehyde

D. M. Halepoto, **L. F. Larkworthy,** D. C. Povey, G. W. Smith and V. Ramdas — 1453 — Some complex halides of vanadium(II) and vanadium(III). The crystal and molecular structure of tetrakis(methylammonium) hexachlorovanadate(III) chloride

S. P. Perlepes, S. Kasselouri, A. Garoufis, F. Lutz, R. Bau and **N. Hadjiliadis** — 1461 — Reaction of the biheteroaromatic ligand 2-(2′-pyridyl)quinoxaline (L) with zinc(II) and cadmium(II) halides: preparation and characterization of the 1 : 1 complexes

Jin Liang Guo, Feng Sun, Yong Li and **N. Azuma** — 1471 — Molecular and crystal structure of dichloro(5,10,15,20-tetraphenylporphinato)phosphorus(V) chloride dichloromethane solvate

S. Zaydoun, M. Saidi Idrissi, A. Zrineh, B. Agricole and C. Garrigou-Lagranage — 1477 — Transition metal complexes of 1,2,4-triazole: electronic and magnetic studies

Yao Tian-Ming, Zuo Jing-Lin, **You Xiao-Zeng** and Huang Xiao-Ying — 1487 — Syntheses and properties of the nickel complexes of 1,2-dithiolates MEDT and PHDT. The crystal structure of $[Bu_4N][Ni(MEDT)_2]$

J. Costa Pessoa, S. M. Luz and **R. D. Gillard** — 1495 — Oxovanadium(IV) and amino acids—VIII. L-Histidine derivatives and related ligands: a spectroscopic study

G. Crisponi, F. Cristiani, V. M. Nurchi, R. Silvagni, M. L. Ganadu, G. Lubinu, **L. Naldini** and A. Panzanelli — 1517 — A potentiometric, spectrophotometric and ^1H NMR study on the interaction of cimetidine, famotidine and ranitidine with platinum(II) and palladium(II) metal ions

Announcement

I Annual Polyhedron Publication Award

NUMBER 12

iii Contributors to this issue

iv Deposition of crystallographic data

E. P. Turevskaya, **N. Ya. Turova,** A. V. Korolev, A. I. Yanovsky and Yu. T. Struchkov — 1531 — Bimetallic alkoxides of niobium

Wu Heping, Zhao Zhuanyun, **Yin Yuanqi,** Jin Daosen and Huang Xiaoying — 1543 — Synthesis, characterization and crystal structure of heterometal clusters $RCCo_2M(CO)_8(CH_3Cp)$ and $RCCoM_2(CO)_7(CH_3Cp)_2$

V. N. Kokozay and A. V. Sienkiewicz — 1547 — Direct synthesis and crystal structure of lead(II) compounds containing N,N,N′,N′-tetramethylethylenediamine and its cyclization derivative

P. O. Lumme and H. Knuuttila — 1553 — Studies on coordination compounds—VIII. Syntheses, structural, magnetic, spectral and thermal properties of some cobalt(II), nickel(II) and copper(II) complexes of 2-aminopyrimidine

Luqin Yang, Shiping Yan, Diazheng Liao, Zonghui Jiang, Genglin Wang, Panwen Shen, Honggen Wang, Ruji Wang and Xinkan Yao — 1565 — Synthesis, properties, structure and bioactivity *in vitro* of mononuclear complexes of manganese and nickel with hydroxyethyltribenzimidazolylmethyl ethylene diamine

E. S. Kumar, M. G. Muralidhara and **V. Chandrasekhar** — 1571 — Reactions of N-methyl 1,3-diaminopropane with $N_3P_3Cl_6$ and *gem*-$N_3P_3Cl_4Ph_2$ leading to spirocyclic products

Ming-Ming Miao, Dai-Zheng Liao, Zong-Hui Jiang, Shi-Ping Yan and **Geng-Lin Wang** — 1577 — Syntheses and magnetism of trinuclear copper(II) 1,2-ethylenebis (oxamido) complexes

S. Mitra, H. Biswas and **P. Bandyopadhyay** — 1581 — Synthesis, spectral properties and redox behaviour of *cis*-dioxo-molybdenum(VI) complexes with tridentate arylazo ligands

A. S. Abd-el-Aziz, Yun Lei and C. R. De Denus — 1585 — Aliphatic diols in the synthesis of bis(cyclopentadienyliron) arene complexes

J. Granifo — 1593 — Synthesis of the mononuclear $Mo(CO)_4(L)$[L = 5,6-diphenyl-3-(2-pyridyl)-1,2,4-triazine (dppt) or 3,5,6-tri(2-pyridyl)-1,2,4-triazine (tpt)] complexes and the chelating action of the Mo $(CO)_4$(tpt) derivative towards $M(hfac)_2$ (M = Mn, Fe, Co, Ni, Cu, Zn; hfac = hexafluoroacetylacetonate ion)

R. Moreno-Esparza, **H. Torrens,** M. Arroyo, J. L. Briansó, C. Miravitlles and J. Rius — 1601 — Monothiocarboxylate complexes of osmium(III) with fluorothiolates and dimethylphenylphosphine co-ligands. X-ray crystal structures of $[Os(SR)_2(SOCCH_3)(PMe_2Ph)_2]$ (R = C_6F_5 or C_6F_4H-4)

K. R. Justin Thomas, **V. Chandrasekhar,** S. R. Scott and A. W. Cordes — 1607 — Copper(II) and cobalt(II) complexes of 2,2-diphenyl-4,4,6,6-tetrakis(1-pyrazolyl)cyclotriphosphazene, $N_3P_3Ph_2Pz_4$. X-ray crystal structure of $N_3P_3Ph_2Pz_4 \cdot CoCl_2 \cdot 0.5CH_2Cl_2$

R. Pastorek, Z. Trávníček, Z. Šindelář, R. Klička, F. Březina and J. Marek — 1615 — Ethylxanthates and isopropylxanthates of nickel with triphenylphosphine as mixed π-acceptor ligand

K. L. Brown, X. Zou, G.-Z. Wu, J. D. Zubkowski and E. J. Valente — 1621 — Epimerization of cyanocobalamin. Improved synthesis of cyano-8-epicobalamin and its characterization by X-ray crystallography, and ^1H,^{13}C, and ^{15}N NMR

D. C. Ware, D. S. Mackie, P. J. Brothers and W. A. Denny — 1641 — Synthesis and characterization of cationic bis-aziridine cobalt (III) complexes containing Schiff base ligands

X. Gan, **M. Munakata,** T. Kuroda-Sowa, M. Maekawa and M. Yamamoto — 1647 — Synthesis, structure and properties of a linear copper(I) coordination polymer with tetrakis(ethylthio)tetrathiafulvalene

A. Drljaca and **L. Spiccia** — 1653 — Early stages of the hydrolysis of chromium(III) in aqueous solution—X. Kinetics of formation of trimer from monomer and dimer

I. Cukrowski, F. Marsicano, **R. D. Hancock,** P. T. Tshetlho, and W. A. L. van Otterlo — 1661 — The neutral oxygen donor in complexes of lead and cadmium: a differential pulse polarographic, potentiometric and calorimetric study

K. Kasuga, H. Miyasaka, M. Handa and M. Dairaku — 1675 — Photoreduction of methylviologen catalysed by tri- or tetrasulphophthalocyaninatozinc(II) in aqueous solutions

D. X. West, Yonghong Yang, T. L. Klein, K. I. Goldberg, A. E. Liberta, J. Valdes-Martinez and R. A. Toscano — 1681 — Binuclear copper(II) complexes of 2-hydroxyacetophenone ^{4}N-substituted thiosemicarbazones

Communication

Wai-Kwok Wong, Tao Jiang, D. W. J. Kwong and **Wing-Tak Wong** — 1695 — Synthesis and X-ray crystal structure of *cis*-$(CO)_4Cr[(Me_3SiN)C(Ph)(NHPPh_2)]$

Announcement

I — Annual Polyhedron Publication Award

NUMBER 13/14

iii — Contributors to this issue

iv — Deposition of crystallographic data

R. D. Hancock, I. Cukrowski, I. Antunes, E. Cukrowska, J. Mashishi and K. Brown — 1699 — Complexation of Bi^{III} by nitrogen donor ligands. A polarographic study

C. Pettinari, G. Gioia Lobbia, G. Sclavi, D. Leonesi, M. Colapietro and G. Portalone — 1709 — Synthesis and characterization of derivatives of copper(I) with N-donor ligands—I. Azole and bis(azolyl)alkane compounds. Crystal structure of nitrato bis(tri-*p*-tolylphosphine)copper(I)

L. F. Sala, C. Palopoli and S. Signorella — 1725 — Oxidation of 2-acetamido-2-deoxy-D-glucose by Cr^{VI} in perchloric acid

S. Calogero, L. Stievano, G. Gioia Lobbia, A. Cingolani, P. Cecchi and G. Valle — 1731 — Mössbauer and X-ray structural studies on chloro(organo) tin(IV) polypyrazolylborates

M. Decoster, F. Conan, J. E. Guerchais, Y. Le Mest, **J. Sala Pala,** J. C. Jeffery, E. Faulques, A. Leblanc and P. Molinie — 1741 — Radical cation–radical anion salts: molybdenum complexes containing the $[TCNQ]^{\bullet-}$ or $[TCNE]^{\bullet-}$ radical anions. X-ray crystal structure of $[Mo(Et_2NCS_2)_4](TCNQ)$

M. A. S. Goher and **F. A. Mautner** — 1751 — Preparation, spectral and crystal structure study of polymeric 1:1 and dimeric 1:2 complexes of copper(II) azide with pyridine-*N*-oxide and 3-acetylpyridine, $[Cu(pyridine\text{-}N\text{-}oxide)(N_3)_2]_n$ and $[Cu(3\text{-}acetylpyridine)_2(N_3)_2]_2$

S. H. Laurie and R. H. Byrne — 1759 — Use of cadmium to determine complexing capacities and conditional stability constants of other metal–ligand systems *via* anodic stripping voltammetry

D. W. Bruce, A. Thornton, **B. Chaudret,** S. Sabo-Etienne, T. L. Axon and G. H. Cross	1765	Pentamethylcylopentadienyl ruthenium complexes as potential optically non-linear materials
L. A. Herrero and **A. Terrón**	1771	Interactions of nickel(II) with adenosine, uridine and cytidine monophosphates. A calorimetric study
B. W. Tattershall, R. Blachnik and A. Hepp	1779	β-Tetraphosphorus trichalcogenide compounds containing two different exocyclic ligands as well as both sulfur and selenium
D. P. Arnold and E. R. T. Tiekink	1785	Tin(IV) porphyrin complexes—VII. Crystal structures of *meso*-tetraphenylporphyrinatotin(IV) difluoride and dinitrate, and the correlation of spectroscopic data with core size for tin(IV) porphyrin complexes
Wai-Hong Fung, Wing-Chi Cheng, Shie-Ming Peng and **Chi-Ming Che**	1791	Synthesis, characterization and electrochemistry of phenylimido-rhenium(V) complex of 1,4,7-triazacyclononane (tacn)
J. Smith, **W. Purcell,** G. J. Lamprecht and J. G. Leipoldt	1795	The crystal structure of $(AsPh_4)_2[Re(NO)(H_2O)(CN)_4]\cdot 5H_2O$
R. Singh and **S. K. Dikshit**	1799	Synthesis and characterization of mixed ligand copper(I) complexes containing halides, triphenylarsine and *N,N*-dimethyl-*N'*-phenylthiourea (dmptH), *N,N*-dibutyl-*N'*-phenylthiourea (dbptH) or 1,3-thiazolidine-2-thione (tzdtH). The X-ray crystal structure of $[Cu(PPh_3)_2$ (dmptH)Cl]
F. A. Mautner and M. A. S. Goher	1809	A new modification of polymeric 1:2 complex of copper(II) azide with pyridine containing simultaneous $\mu(1,1)$ and $\mu(1,3)$ bridging azido ligands between copper(II) centres
Xue-Xiang Xu, **Xiao-Zeng You,** and Xiao-Ying Huang	1815	Potential molecular materials based on organic–inorganic charge-transfer salts derived from $[Mo_6O_{19}]^{2-}$ isopolyoxoanion and hemicyanine dyes: synthesis, spectra properties and X-ray structure
J. S. Casas, A. Castiñeiras, M. D. Couce, A. Sanchez, J. Sordo and J. M. Varela	1825	The $CdCl_2$/thiamine (vitamin B_1) system: crystal structure and spectroscopic properties of the new complex *trans*-[Cd (thiamine)$_2$Cl$_4$]
A. Lehtonen and **R. Sillanpää**	1831	Preparation and structural studies of tungsten(VI)diolato adducts of phenol and aniline
M. Jamnický, P. Segl'a and M. Koman	1837	Methanolysis of pyridine-2-carbonitrile in the coordination sphere of copper(II), cobalt(II) and nickel(II). The structure of $[Ni(O$-methylpyridine-2-carboximidate$)_3]Br_2\cdot 4H_2O$
H.-J. Pietzsch, H. Spies, P. Leibnitz and G. Reck	1849	Technetium and rhenium complexes with thioether ligands—IV. Synthesis and structural characterization of binuclear oxo-rhenium(V) complexes with bidentate thioether coordination
G. Garcia, I. Solano, G. Sanchez, **G. Lopez,** J. Casabo, E. Molins, and C. Miravitlles	1855	Preparation and study of functionalized 1,2,4-triazine derivatives of the (η^6-arene)Ru^{II} (arene=benzene or *p*-cymene) and (η^5-C_5Me_5)Rh^{III} moieties
M. Angeles Máñez, M. J. Fernández-Trujillo and **M. G. Basallote**	1865	Fe^{II} complexes with tripod phosphines, $Ph_2PCH_2CH_2PPh_2$ and NEt_3: stability and kinetics of formation
G. Asgedom, A. Sreedhara and **C. P. Rao**	1873	Oxovanadium(V) Schiff base complexes of trishydroxymethylaminomethane with salicylaldehyde and its derivatives: synthesis, characterization and redox reactivity
J. M. Andersen and **J. R. Moss**	1881	The synthesis, characterization and reactivity of the binuclear complexes $[(OC)_5MC(O)(CH_2)_nC(O)M(CO)_5]$ (M=Mn, Re; n= 4–8, 10) and $[(OC)_5M(CH_2)_nM(CO)_5]$ (M=Mn, Re; n=4–8, 10 and M=Re, n=9)

A. J. Blake, S. Parsons, J. M. Rawson and **R. E. P. Winpenny**	1895	The preparation and crystal structures of $Cu(Hdpa)(chp)_2$ and a new phase of $Cu(dpa)_2$ [Hdpa = 2-(pyridyl-2-amino)-pyridine, Hchp = 6-chloro-2-hydroxypyridine]
G. Faraglia, D. Longo, V. Cherchi and S. Sitran	1905	Decomposition intermediates in palladium–dithioester systems
D. W. Bruce and J. P. Rourke	1915	The synthesis and characterization of potentially mesomorphic carbonyl complexes of tungsten(0) with substituted pyridines
G. Carta, **F. Benetollo,** S. Sitran, G. Rossetto, F. Braga and P. Zanella	1923	Adducts of $InCl_3$ with Lewis bases: crystal and molecular structure of $[(InCl_3)_2(DME)_3]$
S. Zamponi, G. Gambini, P. Conti, G. Gioia Lobbia, **R. Marassi,** M. Berrettoni and P. Cecchi	1929	Electrochemical, spectroelectrochemical and X-ray absorption spectroscopic study of some iron(II) and iron(III) polypyrazolylborato complexes
M. J. Begley, **D. B. Sowerby, P. Kapoor** and R. Kapoor	1937	Trimethyltin(IV) naphthoates: X-ray structure of the 2-isomer
J. P. Declercq, J. Feneau-Dupont and J. Ladriere	1943	Crystal structure and Mössbauer study of trilithium iron(III) trioxalate pentahydrate
G. S. Harris, A. Khan and A. Mahomedy	1953	Some tris(*para*-substituted phenyl)arsine–halogen adducts—a conductance study
Y. Miyazaki	1961	NMR studies on the complexation of aluminium ion with inorganic ligands in crosslinked polysaccharide gel
N. M Shuaib and **M. S. El-Ezaby**	1965	Complexes of vitamin B_6—part XXII. The interaction of vitamin B_6 compounds with Cu^{II}–glycinehydroxamic acid binary system
B. Chakravarty and R. Bhattacharya	1981	The kinetics and mechanism of the formation of thiocyanato–bridged dinuclear complex ion $[Ru_2(NH_3)_8(SCN)_3]^{3+}$
K. K. Pandey and K. H. Garg	1987	Organometallic thionitrosyl and nitrosyl complexes of ruthenium
P. K. Mohapatra and **V. K. Manchanda**	1993	Complexation of americium(III) with a diaza-crown ether
T. Ozawa, K. Jitsukawa, H. Masuda and **H. Einaga**	1999	Thermodynamic stability and formation mechanism of iron(III) complex with *N*-pyridoxyl-*o*-hydroxyaniline: role of phenolate oxygen on the enhancement of the stability
N. Bachelier and **J.-F. Verchere**	2009	Formation of neutral complexes of boric acid with 1,3-diols in organic solvents and in aqueous solution

NUMBER 15/16

	iii	Contributors to this issue
	iv	Deposition of crystallographic data
W. P. Griffith, Tse Yuen Koh, A. J. P. White and **D. J. Williams**	2019	Two new complexes of 1,8-naphthyridine (napy): the X-ray crystal structures of $[OsO_4(napy)]$ (1) and of $(Ag_2(\mu\text{-napy})_2(NO_3)_2]$ (2)
E. Hey-Hawkins and K. Fromm	2027	Mixed-valence dinuclear molybdenum complexes: synthesis and molecular structure of $(Cp°Mo)_2(\mu\text{-Cl})_n(\mu\text{-PPh}_2)_{3-n}$ (n=1,0; $Cp° = \eta^5\text{-}C_5Me_4Et$)

Luqin Yang, Shiping Yan, Genglin Wang, Honggen Wang, Ruji Wang and Xinkan Yao	2037	Synthesis and crystal structure of a novel dinuclear complex of cobalt(II) with a new benzimidazole-containing azacycle ligand
I. Haiduc, R. Cea-Olivares, S. Hernández-Ortèga and C. Silvestru	2041	Unexpected linear P—N—P fragment in the anion $[SPh_2PNPPh_2S]^-$: crystal structure of bis(triphenylphosphine) iminium dithiotetraphenylimidodiphosphinate, $[Ph_3PNPPh_3]^+[SPh_2PNPPh_2S]^-$
A. Silvestru, **I. Haiduc,** R. A. Toscano and H. J. Breunig	2047	Triphenyltelluronium derivatives of dithiophosphorus ligands: crystal and molecular structure of $[Ph_3Te][S_2PPh_2]$ and $[Ph_3Te][(SPPh_2)_2N]$, displaying weak cation–anion Te···S secondary interactions
J. S. Casas, A. Castiñeiras, M. S. Garcia-Tasende, A. Sánchez, J. Sordo and E. M. Vázquez-López	2055	The X-ray crystal structure of bis(dicyclohexyldithiophosphato) cadmium(II)
W. Radecka-Paryzek and V. Patroniak-Krzyminiewska	2059	Yttrium(III) complexes of pentadentate Schiff base macrocyclic ligands with N_3O_2 and N_5 set of donor atoms
S. Mandal, R. Shukla and **P. K. Bharadwaj**	2063	Modelling the blue protein active sites: synthesis and characterization of CuN_2S_2 complexes showing rhombic EPR spectra and high Cu^{II}/Cu^{I} potential
Z.-P. Bai, J. Hidaka and and **H. Einaga**	2071	Coordination reaction of iron(III) with 8-hydroxy-7-[(2-hydroxy-5-carboxyphenyl)azo]-5-quinolinesulphonic acid: evidence for kinetic linkage isomerism
Li-Cheng Song, Jin-Yu Shen, Qing-Mei Hu and Xiang-Dong Qin	2079	The study of isolobal displacement reactions. Synthesis and characterization of heteronuclear transition-metal clusters $[(\eta^5\text{-}RC_5H_4)(CO)_2M][(\eta^5\text{-}R'C_5H_4)(CO)_2M']Fe(CO)_3(\mu_3\text{-}S)$, $[(\eta^5\text{-}R'C_5H_4)(CO)_2M']_2\ Fe(CO)_3\ (\mu_3\text{-}S)$ (M,M′=Mo or W) and $[(\eta^5\text{-}MeO_2CC_5H_4)(CO)_2W][(\eta^5\text{-}MeC(O)C_5H_4)(CO)_2W]\ Fe(CO)_3\ (\mu_3\text{-}S)$
M. Cameron, **B. G. Gowenlock** and G. Vasapollo	2087	Coordination complexes of palladium dichloride with 4-substituted nitrosobenzenes
K. Selvakumar and **S. Vancheesan**	2091	Synthesis and characterization of double cyclopalladated complexes of Schiff bases and azine—oxidative addition of aryl–halogen bond
Young-A Lee, Ok-Sang Jung, **Youn Soo Sohn** and Kang Bong Lee	2099	Synthesis and properties of diamine(isopropylidenemalonato) platinum(II): crystal structure of $O(CH_2CH_2)_2C(CH_2NH_2)_2Pt(OOC)_2C{=}C(CH_3)_2$
K. S. Coleman, J. H. Holloway, E. G. Hope, D. R. Russell, **G. C. Saunders** and M. J. Atherton	2107	Tris(2,6-difluorophenyl)phosphite complexes of platinum group metals: structure of *trans*-$PtCl_2(PEt_3)\{P(O\text{-}2,6\text{-}C_6H_3F_2)_3\}$
C. Vansant, **H. O. Desseyn,** V. Tangoulis, C. P. Raptopoulou, **A. Terzis** and **S. P. Perlepes**	2115	Preparation, structural characterization and properties of malonamato(–1) complexes
Meng Lu, **Liu Jingfu,** Wu Yijie, Zhao Daqing and Xiao Yanwen	2127	Synthesis and characterization of α,β-triindium substituted heteropolytungstates
R. Vicente and A. Escuer	2133	Magneto-structural correlations for the S=1 alternating chain $[\{Ni_2(dpt)_2(\mu\text{-}N_3)(\mu'\text{-}N_3)_2\}_n](ClO_4)_n$
E. Radkov and **R. H. Beer**	2139	High yield synthesis of mixed-metal Keggin polyoxoanions in non-aqueous solvents: preparation of $(n\text{-}Bu_4N)_4[PMW_{11}O_{40}]$ (M=V, Nb, Ta)
Ju Chang Kim, Byung Min Lee and Jong Il Shin	2145	Reaction derivatives of nitridomolybdenum(V) porphyrin complexes

R. Prasad	2151	Mono- and dinuclear maleonitriledithiolate and dibenzyldithiomaleonitrile complexes of $(bipy)_2Ru^{II}$: synthesis, spectral and electrochemical study
Hong-Sui Sun, Xi-Meng Wang, Xiao-Zeng You and Xiao-Ying Huang	2159	Synthesis and characterization of adducts of R_3M (R=Me, M=Al, Ga In) with 5,6-benzoquinoline: X-ray crystal structures of Me_3Ga—BQ and $ClMe_2Al$—BQ (BQ=5,6-benzoquinoline)
K. J. Catalan, S. Jackson, **J. D. Zubkowski, D. L. Perry,** E. J. Valente, **L. A. Feliu** and A. Polanco	2165	Copper(II) nitrate compounds with heterocyclic ligands: structures of $[Cu(NO_3)(2,2'\text{-dipyridyl})_2][NO_3]\cdot H_2O$ and $[Cu(H_2O)(1,10\text{-phenanthroline})_2][NO_3]_2$
P. Oudet, G. Bonnet and **C. Moise**	2173	Reaction of the salt $[Cp_2Nb(CO)PPhHCl]^+$, Cl^- with HO^-, MeO^- and $Fe(CO)_4^{2-}$: new synthetic routes to metallophosphinites and functionalized phosphido-bridged heterobimetallic complexes
J. P. Costes, J. M. Dominguez-Vera and J. P. Laurent	2179	Geometrical and optical isomers of the nickel(II) complexes of chiral, tetradentate unmixed and mixed Schiff bases: CD and NMR spectroscopic studies
D. X. West, J. S. Ives, J. Krejci, M. M. Salberg, T. L. Zumbahlen, G. A. Bain, A. E. Liberta, J. Valdes-Martinez, S. Hernandez-Ortiz and R. A. Toscano	2189	Copper(II) complexes of 2-benzoylpyridine ^{4}N-substituted thiosemicarbazones
S. Sivakumar, A. D. Damodaran, **K. G. K. Warrier,** F. J. Berry and L. Smart	2201	Effect of the exchange ion on the properties of boehmite intercalated montmorillonite
Xiulan Xie, Feilong Jiang, Rong Cao, Beisheng Kang, Maochun Hong and Hanqin Liu	2205	Anti-ferromagnetic exchange interaction in the tetracobalt complex of 2-mercaptopyridine-*N*-oxide (mpo), $[Na_3Co_4(mpo)_8(\mu_3\text{-}O)_2(DMF)_4]Br\cdot DMF$
Yan-Tuan Li, **Dai-Zheng Liao,** Zong-Hui Jiang and Geng-Lin Wang	2209	Synthesis and magnetic studies of copper(II)–lanthanide(III) complexes with *N,N'*-bis(2-aminopropyl) oxamidocopper(II)
D. F. Mullica, S. L. Gipson, M. Su and E. L. Sappenfield	2215	Synthesis and characterization of two new molybdenum(0) σ-aryl complexes of the type $[N(PPh_3)_2][Mo(C_6F_5)L(CO)_2\{P(OMe)_3\}_2]$: X-ray crystal structure of bis(triphenylphosphine) iminium pentafluorophenyl(*mer*-tricarbonyl) *trans*-bis(trimethylphosphite)molybdate(0)
Hong Chen and **F. A. Cotton**	2221	Carboxylate exchange among dimolybdenum tetracarboxylates: the trifluoroacetate/formate system
H. Blackburn, H.-B. Kraatz, **R. Poli** and R. C. Torralba	2225	Cyclopentadienyltungsten(IV) chemistry: synthesis and characterization of $(\eta\text{-ring})WX_3(CO)_2$ (ring=C_5H_5, C_5H_4Me, C_5Me_5) and X-ray structure of $(\eta\text{-}C_5Me_5)WBr_3(CO)_2$
C. Silvestru, R. A. Toscano, J. Cardenas, R. Cea-Olivares, A. Silvestru and I. Haiduc	2231	Synthesis and characterization of triphenylgermanium(IV) diorganophospinodithioates: crystal and molecular structures of $Ph_3GeS(S)PR_2$ (R=Me,Ph)
M. Valderrama, R. Contreras, M. Bascuñan, S. Alegria and D. Boys	2239	Bis(diphenylphosphino)methane and its sulphide or selenide derivatives as ligands in ruthenium(II) and rhodium(III) complexes: crystal structure of $[(\eta^6C_6Me_6)Ru\{\eta^3(SPPh_2)_2CH\}]ClO_4$
M. Devereux, M. Curran, **M. McCann,** M. T. Casey and **V. McKee**	2247	Synthesis and catalase activity of manganese(II) complexes of *cis*-5-norbornene-*endo*-2,3-dicarboxylic acid ($ndaH_2$): X-ray crystal structure of $[Mn(\eta^1\eta^1\text{-nda})(phen)_2]\cdot EtOH\cdot H_2O$ (phen= 1,10-phenanthroline)

F. Benetollo, G. Bombieri, P. Gilli, P. M. Harlow, A. Polo and L. M. Vallarino	2255	Chromate and chromate–dichromate complexes of lanthanide-containing macrocycles
E. S. Zvargulis, I. E. Buys and **T. W. Hambley**	2267	Models of the active sites of zinc containing enzymes: the crystal structures of two bis(tripod)zinc(II) complexes
Siang-Guan Teoh, Soon-Beng Teo, Leong-Kok Lee, Yan-Lee Chong and **E. R. T. Tiekink**	2275	Syntheses and characterization of some inorganic tin and organotin(IV) adducts of *N-p*-methoxyphenylpyridine-2-carbaldimine
Lian Ee Khoo, Ngoh Khang Goh, Lip Lin Koh, Yan Xu, Sheng Luo Bao and T. C. W. Mak	2281	The crystal structures of tributyltin and triphenyltin esters of 2-benzoylbenzoic acid
G. P. Voutsas, S. C. Kokkou, C. J. Cheer, **P. Aslanidis** and P. Karagiannidis	2287	Copper(I) halide coordination compounds with benz-1,3-thiazolidine-2-thione and triarylphosphines: the crystal and molecular structure of $[Cu(PPh_3)_2(bztzdtH)Cl]CH_3COCH_3$
A. Jain and M. A. Beg	2293	Kinetics and mechanism of solid state reactions of silver tungstate with mercuric bromide and mercuric chloride
		Announcements
	I	Annual Polyhedron Publication Award

NUMBER 17/18

	iii	Contributors to this issue
	iv	Deposition of crystallographic data
Y. Nishida and S. Ito	2301	Structures and reactivities of several iron(III) complexes in the presence of hydrogen peroxide: relevance to induction of tissue damage caused by iron(III) chelates in rats
J. Tallon, J. A. Garcia-Vazquez, J. Romero, M. S. Louro, **A. Sousa,** Qin Chen, Yuanda Chang and J. Zubieta	2309	Electrochemical synthesis of mercury(II) complexes with some heterocyclic thiones: the crystal and molecular structures of bis(6-tertbutyldimethylsilyl)2-pyridyl disulphide (6-Bu^t SidmepyS-Spy-6-Bu^{t}Sidme) and Hg (6-Bu^{t}SidmepyS)$_2$
S. Ameerunisha and **P. S. Zacharias**	2319	Tweezer ligands for pH regulated selective metal ion transport
T. Nyokong	2325	Equilibrium and kinetic studies of the reaction between pyridine and cobalt(II) phthalocyanine in DMSO
B. Pitteri, G. Marangoni and L. Cattalini	2331	The reactivity of cationic platinum(II) complexes containing the tridentate ligand bis(2-pyridylmethyl)sulphide
M. T. Azcondo, **L. Ballester,** L. Calderón, A. Gutiérrez and M. F. Perpiñán	2339	Stabilization of TCNQ anion radical with di- and triamine complexes of nickel and copper
S. Kannan and V. Venugopal	2349	Synthesis and characterization of mononuclear and dinuclear adducts of carbamylmethylenephosphonate with uranyl bis (β-diketonates)
Peng Cheng, Diazheng Liao, Shiping Yan, Zonghui Jiang and **Genglin Wang**	2355	Synthesis and characterization of some binuclear transition metal complexes of a binucleating ligand
U. Engelhardt, B. M. Rapko, E. N. Duesler, D. Frutos, **R. T. Paine** and P. H. Smith	2361	Synthesis and molecular structures of complexes of bismuth (III) nitrate with tridentate ligands: 2,6-bis(—CH_2—P(=O) R_2) substituted pyridine-*N*-oxides

A. V. Yatsenko, L. A. Aslanov and H. Schenk 2371 X-ray structural study of $Ph_2PbCl_2(DMSO)_2$, $Ph_2PbCl_2(HMPT)_2$ and $Ph_3PbCl(HMPT)$

M. McCann, J. F. Cronin, **M. Devereux** and **G. Ferguson** 2379 Copper(II) complexes of heptanedioic acid ($hdaH_2$) and octanedioic acid ($odaH_2$): X-ray crystal structures of $[Cu(\eta^2\text{-hda})(phen)_2]\cdot 11.73H_2O$ and $[Cu(\eta^2\text{-oda})(phen)_2]\cdot 12H_2O$ (phen=1,10-phenanthroline)

H. G. Raubenheimer, S. Cronje, G. J. Kruger and P. J. Olivier 2389 Synthesis and characterization of copper(I) halide imine complexes

F. S. Mair, D. Scully, A. J. Edwards, P. R. Raithby and R. Snaith 2397 Synthetic, structural, spectroscopic and calculational studies of a lithium β-diketinimate complex

Zhi-Gang Fang, **T. S. A. Hor,** Yuh-Sheng Wen, **Ling-Kang Liu** and T. C. W. Mak 2403 Molecular structures of 1,1′-bis(diphenylphosphino)ferrocene oxide and sulphide and their thermal properties

J. R. Zamian, **E. R. Dockal,** G. Castellano and G. Oliva 2411 Synthesis and characterization of [*N,N′*-ethylenebis(3-ethoxysalicylideneaminato)]oxovanadium(IV)

M. C. Barral, **R. Jiménez-Aparicio,** J. L. Priego, E. C. Royer, M. J. Saucedo, F. A. Urbanos and U. Amador 2419 Influence of carboxylic acids on the reactions with chlorotetraacetatodiruthenium(II,III): X-ray crystal structure of $[Ru_2(\mu\text{-}O_2CC_4H_3S)_4(OPPh_3)_2]BF_4\cdot 2H_2O$

M. Charissé, B. Mathiasch, **M. Dräger** and **U. Russo** 2429 Tetraaryl-methane analogues in group 14—4. $Ph_{4-n}M(p\text{-Tol})_n$ (n=0–4, M=Si, Ge, Sn, Pb). Synthesis, structural and spectroscopic data, and semi-empirical calculations: mutual interaction of tetrahedral σ-orbitals (symmetry and electronegativity) and delocalized σ^*-lumos (π-Lewis acidity)

P. Cecchi, B. Bovio, **G. Gioia Lobbia,** C. Pettinari and D. Leonesi 2441 Synthesis and characterization of copper(I) derivatives with nitrogen-donor ligands—II. Dihydridobis- and tetrakis(1*H*-pyrazol-1-yl)borate. The X-ray crystal structure of $[pz_2B(\mu\text{-}pz)_2\text{-}Cu(PPh_3)_2]$

Jian-Jun Zhao, Wei-Chun Yang, Xiao-Qing Wang and **Tian-Zhu Jin** 2451 Synthesis of lanthanide complexes with L-isoleucine: X-ray crystal structure of $[Nd_2(Ileu)_4(H_2O)_8](ClO_4)_6$

M. P. Coles, C. I. Dalby, **V. C. Gibson,** W. Clegg and M. R. J. Elsegood 2455 Bis(arylimido) complexes of chromium(VI)

U. M. Tripathi, **A. Singh** and R. C. Mehrotra 2461 The first nonaisopropoxodistannate derivatives of lanthanides and yttrium

G. A. Van Albada, J. G. Haasnoot, J. Reedijk, **M. Biagini-Cingi,** A. M. Manotti-Lanfredi and F. Ugozzoli 2467 A new copper(II) alternating-chain structure with carboxylato and carboxylic acid bridges; the structure and spectroscopic properties of *catena*-poly[{bis{μ-[pentane-1,5-bis(carboxylic acid)-monoato-O^{α}, O^{ω}]}-bis(benzimidazole)copper}-μ-(pentane-1,5-bis(carboxylato)-O^{α}, O^{ω})]

T. Kogane, T. Yamamoto, M. Hayashi, R. Hirota and C. A. Horiuchi 2475 Characterization of reaction products of several bis(β-diketonato) copper(II) compounds with 1H-pyrazoles. Adducts, di- and tetranuclear complexes, and coordination polymers

G. A. Spyroulias and **A. G. Coutsolelos** 2483 Synthesis and spectroscopic studies of lanthanide monoporphyrinates with *meso*-tetra-aryl porphyrinate bearing bromines on the β-pyrrole positions or fluorines on phenyl groups

C. D. Chandler, J. Caruso, **M. J. Hampden-Smith** and A. L. Rheingold	2491	Structural investigation of tin(IV) alkoxide compounds—II. Solid state and solution structural characterization of $[Sn(O\text{-}i\text{-}Bu)_4 \cdot HO\text{-}i\text{-}Bu]_2$
J. A. Thomas, **C. J. Jones, J. A. McCleverty,** D. W. Bruce and M. G. Hutchings	2499	The syntheses of some paramagnetic stilbazole complexes and an evaluation of their redox and mesogenic properties
M. Sakamoto, Y. Nishida, K. Ohhara, Y. Sadaoka, A. Matsumoto and H. Ökawa	2505	Copper(II)–lanthanide(III) complexes of compartmental ligand, N,N′-bis(3-hydroxysalicylidene)ethylenediamine
I. K. Breakwell, J. Homer, M. A. M. Lawrence and **W. R. McWhinnie**	2511	Studies of organophilic clays: the distribution of quaternary ammonium compounds on clay surfaces and the role of impurities
Peng Cheng, Lingjun Bai, Daizheng Liao, Shiping Yan, Zonghui Jiang and **Genglin Wang**	2519	Electronic paramagnetic resonance studies on binuclear copper(II) complexes with different exogenous bridges
B. A. Goodman, C. G. Palivan and C. Cristescu	2523	Characterization by electron paramagnetic resonance spectroscopy of the coordination environment of copper in some copper(II) complexes of asymmetric triazines having high superoxide dismutase activity
A. Garcia-Raso, A. Terron, **J. J. Fiol,** E. Molins and C. Miravitlles	2537	X-ray crystal structure of a ternary copper(II) peptide creatinine complex, (aquo)(creatinine)(glycylglycinato) copper(II) sesquihydrate
J. Charalambous, R. G. Rees, **T. A. Thomas,** O. Carugo and C. Bisi Castellani	2547	First comparative study of the structure of a 1,2-quinone monooxime, its hydrochloride salt and main-group metal complex
D. M. L. Goodgame, T. E. Müller and D. J. Williams	2557	X-ray structure of $Pt(dipic)(H_2O)$ (where H_2dipic=2,6-pyridinedicarboxylic acid); the first structurally characterized mononuclear complex with a $Pt^{II}(N_1O_3)$ donor atom set
B. P. Maurya, A. Punnoose, M. Ikram and **R. J. Singh**	2561	EPR study of Mn^{2+} ion doped in potassium oxalate monoperhydrate single crystal
D. M. Choquette, W. E. Buschmann, R. F. Graceffa and **R. P. Planalp**	2569	Synthesis and reactivity of cyclopentadienyltitanium complexes of the polydentate alkoxide ligand *cis*-1,3,5-cyclohexanetrialkoxide
A. Z. Al-Rubaie, A.-A. M. Fingan, N. I. Al-Salim and S. A. N. Al-Jadaan	2575	Synthesis and characterization of some new organotellurium compounds containing an ortho-acetamido group
L. I. Victoriano, X. A. Wolf and H. Cortés	2581	The reaction of copper(II) halides and tetraalkylthiuram monosulphides
M. A. S. Goher and T. C. W. Mak	2587	Preparation and spectral characterization of copper(I) halide, nitrate and perchlorate complexes of pyrazinic acid and X-ray crystal structure of polymeric $[Cu_2(pyrazinic\ acid)_2I_2] \cdot 3H_2O$
		Communication
Xiang-Dong Jiao, Jin-Wang Huang, Jun-Feng Liu, **Liang-Nian Ji** and Liang-Bo Feng	2595	The novel magnetic properties of ferric ion on the addition of pyridines to a tailed porphyrin iron(III) complex as studied by EPR spectroscopy
		Book Review
S. Cotton	2599	Inorganic experiments
		Announcements
	I	Annual Polyhedron Publication Award

NUMBER 19

POLYHEDRON SYMPOSIA-IN-PRINT NUMBER 15

ORGANIC AND ORGANOMETALLIC COMPOUNDS IN A STATE OF FLUX

Editor: J. D. Woollins & *Guest Editor*: K. G. Orrell

	iii	Contributors to this issue
	iv	Deposition of crystallographic data
	v	Announcement: Polyhedron Symposia-in-Print
K. G. Orrell	2601	Preface
Y. Oishi, **T. A. Albright** and H. Fujimoto	2603	Fluxionality in $(BH_4)Mn(CO)_4$ and $(BH_4)Cu(PH_3)_2$
T. G. Appleton, J. R. Hall, T. G. Jones and J. A. Sinkinson	2613	Di- and trimethylplatinum(IV) complexes with aspartate: some subtle effects of chelate ring size
M. A. Beckett, G. C. Strickland, K. S. Varma, D. E. Hibbs, **M. B. Hursthouse** and K. M. A. Malik	2623	Synthesis and characterization of amine adducts of tri(4-tolyl) boroxine and tri(3,5-xylyl)boroxine: molecular structure of $(4\text{-}MeC_6H_4)_3B_3O_3 \cdot$ cyclohexylamine
P. D. Beer and S. E. Stokes	2631	Potassium cations allosterically switch off the halide anion recognition properties of a new cobalticinium bis benzo crown ether receptor
M. A. Bennett, D. C. R. Hockless and E. Wenger	2637	Preparation of (*ortho*-halogeno)-η^1-pyridylnickel(II) complexes, precursors for the generation of pyridyne–nickel(0) complexes
M. I. Bruce, N. N. Zaitseva, B. W. Skelton and A. H. White	2647	A new bow-tie: synthesis and X-ray structure of $Co_2Ru_3(\mu_5\text{-}\eta^2\eta^2\text{-}PhC_2C_2Ph)(CO)_{14}$, which shows a remarkable and unusual asymmetry in the solid state
W. R. Cullen, S. J. Rettig and Tu Cai Zheng	2653	The reaction of PhSR(R=Fc or Ph) with $Ru_3(CO)_{12}$
D. M. Michaelidou, **M. L. H. Green,** A. K. Hughes, P. Mountford and A. N. Chernega	2663	The lanthanide–hydrogen–transition metal compounds: $[\{(PMe_3)_3WH_5\}_2Yb \cdot L_3]$ and $[\{(\eta\text{-}C_5H_5)_2NbH_2\}_2Yb \cdot L_3]$ where $L_3 = (MeOCH_2CH_2)_2O$, and related studies
B. T. Heaton, C. Jacob and J. Ratnam	2677	Structures of rhodium complexes containing substituted hydrazines from multinuclear NMR studies
M. Herberhold, U. Dörfler and **B. Wrackmeyer**	2683	Dynamic behaviour of some boryl-substituted ferrocenes
J. A. Chudek, **G. Hunter,** J. D. Paton and B. A. Walmsley	2691	A magic angle spinning ^{13}C NMR study of ^{13}CO-labelled tricarbonyl(hexahapto-hexamethylbenzene)chromium(0) and tricarbonyl(hexahapto-durene)chromium(0)
A. J. Blake, P. J. Dyson, **B. F. G. Johnson, D. Braga,** J. J. Byrne and F. Grepioni	2697	The synthesis, molecular structure and crystal organization of $HRu_5C(CO)_{13}(\eta^5\text{-}C_5H_5)$
A. Khanna, **B. L. Khandelwal,** A. K. Saxena and T. P. Singh	2705	Dichloromethane assisted oxidation of Pt(0) via cleavage of Te—C_{aryl} bond of an asymmetric telluride leading to the formation of *trans*-$[PtCl(Ar)(PPh_3)_2]$
K. Kite, **K. G. Orrell,** V. Šik and Y. Roger	2711	The kinetics of trisbidentate chelate complexes revisited. A two-dimensional NMR study of the isomerization and racemization processes of the complexes $[M(TTA)_3]$ ($M=Al^{III}$, Ga^{III}; TTA=2-thenoyltrifluoroacetone)

S. A. R. Knox, B. R. Lloyd, D. A. V. Morton, A. G. Orpen, M. L. Turner and G. Hogarth — 2723 — Reactions of $[Fe_2(CO)_6(\mu\text{-CO})(\mu\text{-dppm})]$ with alkynes: stepwise synthesis of tropone at a dinuclear metal centre

P. B. Hitchcock, **M. F. Lappert,** Dian-Sheng Liu and E. J. Ryan — 2745 — Ligand redistribution reactions as a route to cyclopentadienyl- or 1-aza-allylzirconium(IV) trichlorides and the X-ray structures of $[\{Zr(LL')Cl_2(\mu\text{-Cl})\}_2]$ and $[Zr(LL')_2Cl_2]$ [LL′=N(R)C(Bu^t)CHR, R=SiMe$_3$]

N. R. Champness, **W. Levason,** J. J. Quirk, G. Reid and C. S. Frampton — 2753 — Synthesis, spectroscopic and structural characterization of Pd^{II} and Pt^{II} complexes of the cyclic diselenoether 1,5-diselenacyclooctane, [8]ANSe$_2$

M. C. B. Colbert, D. Hodgson, J. Lewis, P. R. Raithby and **N. J. Long** — 2759 — Synthesis, characterization and electrochemical studies of 1',6'-bis(ethynyl)biferrocene and some metal complexes: novel heterometallic compounds towards non-linear optics

Zhi-Qiang Wang, M. L. Turner, B. F. Taylor and P. M. Maitlis — 2767 — $[\{(C_5Me_5)Rh(\mu\text{-}CH_2)\}_2(Me)(\eta_2\text{-}CH_2{=}CH_2)]PF_6$, a rhodium (IV) ethylene complex

H. Adams, A. G. Carr, **B. E. Mann** and R. Melling — 2771 — An investigation of the fluxionality of $[Fe_3(CO)_{11}(CNBu^t)]$ and $[Fe_3(CO)_{10}(CNBu^t)\{P(OMe)_3\}]$, and the X-ray structure of $[Fe_3(CO)_{10}(CNBu^t)\{P(OMe)_3\}]$

S. S. Rigby, H. K. Gupta, **N. H. Werstiuk,** A. D. Bain and **M. J. McGlinchey** — 2787 — The barriers to trimethylsilyl migrations in indenes and benzindenes: silatropic shifts via aromatic transition states

K. G. Orrell, **A. G. Osborne,** V. Šik and M. W. Da Silva — 2797 — NMR studies of fluxional rhenium carbonyl complexes of 2,6-diacetylpyridine (DAP), *fac*-$[ReX(CO)_3(DAP)]$

I. D. Salter, S. A. Williams and T. Adatia — 2803 — The heteronuclear cluster chemistry of the group IB metals—18. Synthesis, structural characterization and dynamic behaviour of the bimetallic hexanuclear group IB metal cluster compounds $[M_2Ru_4H_2(\mu\text{-dppf})(CO)_{12}]$ [M=Cu, Ag or Au; dppf=$Fe(\eta^5\text{-}C_5H_4PPh_2)_2$]. X-ray crystal structure of $[Cu_2Ru_4(\mu_3\text{-}H)_2(\mu\text{-dppf})(CO)_{12}]$

R. I. Crisp, C. L. Hussey and **K. R. Seddon** — 2819 — The reduction of dioxotetrachlororuthenate(VI) to hexachlororuthenate(IV) in a basic 1-butylpyridinium chloride–aluminium (III) chloride ionic liquid

Announcement

I — Annual Polyhedron Publication Award

NUMBER 20/21

iii — Contributors to this issue

iv — Deposition of crystallographic data

E. Hey-Hawkins and K. Fromm — 2825 — Syntheses and molecular structures of molybdenum complexes with phosphido, diphosphanyl and diphosphene ligands

S. C. Wallis, **L. R. Gahan,** B. G. Charles and T. W. Hambley — 2835 — Synthesis and X-ray structural characterization of an iron(III) complex of the fluoroquinolone antimicrobial ciprofloxacin, [Fe(CIP)(NTA)]3·5H_2O (NTA=nitrilotriacetato)

J. A. Castro, J. Romero, J. A. Garcia-Vazquez, A. Castiñeiras, **A. Sousa** and J. Zubieta — 2841 — Electrochemical synthesis of manganese(II) complexes of pyrimidine-2-thiones: the crystal structures of bis-4,6-dimethylpyrimidyl-2-2′-disulphide and 1,10-phenanthroline-bis (4,6-dimethylpyrimidine-2-thiolato) manganese(II)

Winnie Ging-Yee Ho and **Wing-Tak Wong** — 2849 — Reaction of $[N(PPh_3)_2][Os_3(\mu\text{-}H)(CO)_{11}]$ with $[Cu(PPh_3)_2BH_4]$. Crystal and molecular structures of $[Os_3(\mu\text{-}H)(\mu\text{-}OH)(CO)_{10}]$ and two $[Os_3(\mu\text{-}H)(\mu\text{-}OH)(CO)_8(PPh_3)_2]$ isomeric clusters

M. Jáky	2857	Oxidations of bifunctional substrates with soluble manganese (IV) phosphate
P. Román, A. Luque, C. Guzmán-Miralles and J. I. Beitia	2863	Solid-state chemistry of nickel(II)–oxalate–amine systems. Synthesis, characterization and crystal structure of the bis (2,2′-bipyridine)(oxalato-O,O′) nickel(II) tetrahydrate
C. W. Haigh	2871	A new simple criterion for distinguishing the types of structures in eight-coordinate complexes: the pattern of bond angles
M. Maekawa, M. Munakata, T. Kuroda-Sowa and K. Hachiya	2879	Synthesis and crystal structure of unsymmetrical trinuclear nickel(0) complexes with the 1,3-butadiynes in the monodentate and μ_2-η^2,η^2-bridging mode $[Ni_3(L)(cod)_3]$(L=tmsb and dpbd)
H. Arzoumanian, H. Krentzien, C. Corao, R. Lopez and G. Agrifoglio	2887	Reactions of chlorosilanes with dioxomolybdenum(VI) complexes
J. C. Fanning, L. A. Huff, W. A. Smith, A. S. Terrell, L. Yasinsac, **L. J. Todd,** S. A. Jasper, Jr and **D. J. McCabe**	2893	Caesium cobalt dicarbollide—solubility, precipitation and reactivity in basic aqueous solution
D. P. Singh and V. B. Rana	2901	Binuclear chromium(III), manganese(III), iron(III) and cobalt(III) complexes bridged by diaminopyridine
P. Martín-Zarza, **P. Gili,** F. V. Rodriguez-Romero, C. Ruiz-Pérez and X. Solans	2907	Preparation and characterization of the dichromates of the organic bases: 2,4′-bipyridine, 2,2′-dipyridylamine and 4,4′-bipyridine
M. McCann and K. Maddock	2919	Photooxidation of (±)-2-butanol to 2-butanone using polyoxomolybdate(VI) catalysts: a clean and high yield route
P. Román, J. I. Beitia and A. Luque	2925	Preparation, chemical characterization and thermal study of 2-aminopyridinium salts of square-planar 1,2-dithiooxalato-*S,S′* metal complexes (M=Ni^{II}, Pd^{II} and Pt^{II})
M. Bodini, C. Osorio, M. Angélica del Valle, V. Arancibia and G. Muñoz	2933	Redox chemistry of 3,4-dihydroxy-2-benzoic acid, its oxidation products and their interaction with manganese(II) and manganese(III)
F. Cristiani, **F. A. Devillanova,** F. Isaia, V. Lippolis, G. Verani and F. Demartin	2937	Charge transfer complexes of benzoxazole-2(3*H*)-thione and benzoaxazole-2(3*H*)-selone with diiodine: X-ray crystal structure of benzoxazole-2(3*H*)-thione bis (diiodine)
W. J. Evans, J. L. Shreeve and J. W. Ziller	2945	Synthesis and structure of inverse cyclooctatetraenyl sandwich complexes of europium(II): $[(C_5Me_5)(THF)_2Eu]_2(\mu\text{-}C_8H_8)$ and $[(THF)_3K(\mu\text{-}C_8H_8)]_2Eu$
R. Hahn, **W. A. Herrmann,** G. R. J. Artus and M. Kleine	2953	Biologically relevant metal coordination compounds: $Mo^{VI}O_2$ and nickel(II) complexes with tridentate aromatic Schiff bases
K. L. Brown and D. R. Evans	2961	Heteronuclear NMR studies of cobalt corrinoids—17. Characterization of neopentylcobinamide and neopentyl-13-epicobinamide by ^1H and ^{13}C NMR spectroscopy: inferred corrin ring conformations from chemical shift differentials
Ren Yanping, Ma Qinglan, Zhang Li, Liu Yu and Wang Liufang	2979	Calorimetric titration of complexation of lanthanide α-hydroxycarboxylates with 1,10-phenanthroline
M. Sado, T. Ozawa, K. Jitsukawa and **H. Einaga**	2985	Selectivity in coordination of 7-substituted-8-hydroxy-5-quinolinesulphonates to aluminium(III)
He-Ping Wu, **Yuan-Qi Yin,** and Xiao-Ying Huang	2993	The reaction of the precursor $PhCCo_3(CO)_9$ with $NaW(CO)_3$(RCp): characterization and crystal structure of the clusters $(\mu_3\text{-}CPh)CO_2W(CO)_8(RCp)$ (R=HCO, CH_3CO, C_2H_5OCO)

S. K. Hadjikakou, P. D. Akrivos, **P. Karagiannidis** and N. Papadopoulos 2999 Electrochemical reduction of dinuclear copper(I) mixed ligand complexes with tri-*m*-tolylphosphine and heterocyclic thiones

Chu-Chieh Lin 3005 Preparation of some cyclopentadienyl titanium complexes and crystal structure of (η^5-pentamethylcyclopentadienyl) {(1*R*,2*S*,3*R*)-*exo*-3[(R)-2-phenyl-2-olato-ethyl]sulphenyl-1, 7,7-trimethylbicyclo[2.2.1]heptan-2-olato} chlorotitanium(IV): $[Cp^*Ti(OC_{18}H_{24}SO)Cl] \cdot C_6H_6$

Chan-Cheng Su, Kuo-Yih Hwang, Jan Hua Chen, Sue-Lein Wang, Fen-Ling Liao and Jia-Cherng Horng 3011 Bonding properties of copper(II)–imidazole chromophores: structures and electronic properties of tetrakis imidazole copper(II) complexes. Molecular structures of Cu(*N*-methylimidazole)$_4$(ClO_4)$_2$ and [Cu(*N*-methylimidazole)$_4$ (H_2O)$_2$] Cl_2 (H_2O)

S. Pal, S. N. Poddar, **S. Ghosh** and G. Mukherjee 3023 Complexes of hexadentate NSO-donor ligands—II. Copper(II) complexes of 1,3-di(*o*-salicylaldiminophenylthio)propane and 1,2-di(*o*-salicylaldiminophenylthio)xylene

Peng Jun, Guo Yinhang, Qu Lunyu and Xu Yihua 3029 A novel hexad condensed chromium-containing tungstosilicate(I): synthesis and characterization

Zhixian Zhou, Yingxia Zhou, Yanzhong Li and Kuiling Ding 3033 Studies on the coordination behaviour of 1,3-phenylene bis(formyloxyacetyl-4′-benzo-15-crown-5)

NUMBER 22

POLYHEDRON SYMPOSIA-IN-PRINT NUMBER 16

ALKOXIDES AND RELATED O-DONOR LIGANDS IN ORGANOMETALLIC CHEMISTRY

Co-Editors: M. H. Chisholm & I. P. Rothwell

iii Contributors to this issue

iv Deposition of crystallographic data

v Announcement: Polyhedron Symposia-in-Print

M. H. Chisholm 3175 Preface

R. R. Schrock 3177 The alkoxide ligand in olefin and acetylene metathesis reactions

A. R. Barron 3197 The Al—O bond interaction in four-coordinate aluminum aryloxide compounds

F. Lefebvre, M. Leconte, S. Pagano, A. Mutch and **J.-M. Basset** 3209 Aryloxy complexes and cyclometallated aryloxy alkylidene complexes of tungsten(VI). Application to the metathesis of functionalized olefins

R. G. Bergman 3227 Synthesis and reactions of monomeric late transition metal alkoxo, aryloxo and hydroxo complexes

F. J. Feher and T. A. Budzichowski 3239 Silasesquioxanes as ligands in inorganic and organometallic chemistry

N. W. Eilerts and **J. A. Heppert** 3255 Bisphenol ligands in the stereocontrol of transformations catalyzed by titanium and tungsten

J. M. Mayer 3273 Not solely a spectator: exploring the chemistry of the C—O bond in alkoxide and related ligands

M. A. Lockwood, M. C. Potyen, B. D. Steffey, P. E. Fanwick and **I. P. Rothwell** 3293 Intramolecular hydrogenation of aryloxide ligands at niobium metal centers: stereochemical consequences of reaction regiochemistry

K. D. Allen, M. A. Bruck, S. D. Gray, R. P. Kingsborough, D. P. Smith, K. J. Weller and **D. E. Wigley** 3315 Quinoline binding mode as a function of oxidation state in aryloxide-supported tantalum complexes: models for hydrodenitrogenation catalysis

P. T. Wolczanski 3335 Chemistry of electrophilic metal centres coordinated by silox ($^tBu_3SiO$), tritox ($^tBu_3Co$) and related bifunctional ligands

Communication

M. A. Lockwood, P. E. Fanwick and **I. P. Rothwell** 3363 Conversion of arene groups to η^2-cyclohexene rings at tungsten metal centers

Announcements

I Annual Polyhedron Publication Award

NUMBER 23/24

iii Contributors to this issue

iv Deposition of crystallographic data

Announcements

v Polyhedron Reports

ix Polyhedron Prize for Creativity in Organic Chemistry 1995

xii Annual Polyhedron Publication Award

POLYHEDRON REPORT NUMBER 56

P. Bhattacharyya and **J. D. Woollins** 3367 Bis (diphenylphosphino)amine and related chemistry

POLYHEDRON REPORT NUMBER 57

I. Haiduc, D. B. Sowerby and Shao-Fang Lu 3389 Stereochemical aspects of phosphor-1,1-dithiolato metal complexes (dithiophosphates, dithiophosphinates): coordination patterns, molecular structures and supramolecular associations—I

R. D. Adams, R. Layland and **C. Payen** 3473 New manganese pyrophosphates: the syntheses, crystallographic characterizations and magnetic properties of $BaMnP_2O_7$ and $CaMnP_2O_7$

J. J. Cruywagen, E. A. Rohwer and G. F. S. Wessels 3481 Molybdenum(VI) complex formation—8. Equilibria and thermodynamic quantities for the reactions with citrate

M. Bochmann, G. C. Bwembya, A. K. Powell and Xuejing Song 3495 Zinc(II) arene tellurolato complexes as precursors to zinc telluride. The crystal and molecular structure of $[Zn(TeC_6H_2Me_3\text{-}2,4,6)_2(pyridine)_2]$

Keyu Zhou, Shaohua Gou, Zhilin Wang and Zuanru Yuan 3501 Electrospray ionization mass spectral investigations on multinuclear complexes of an azacryptand

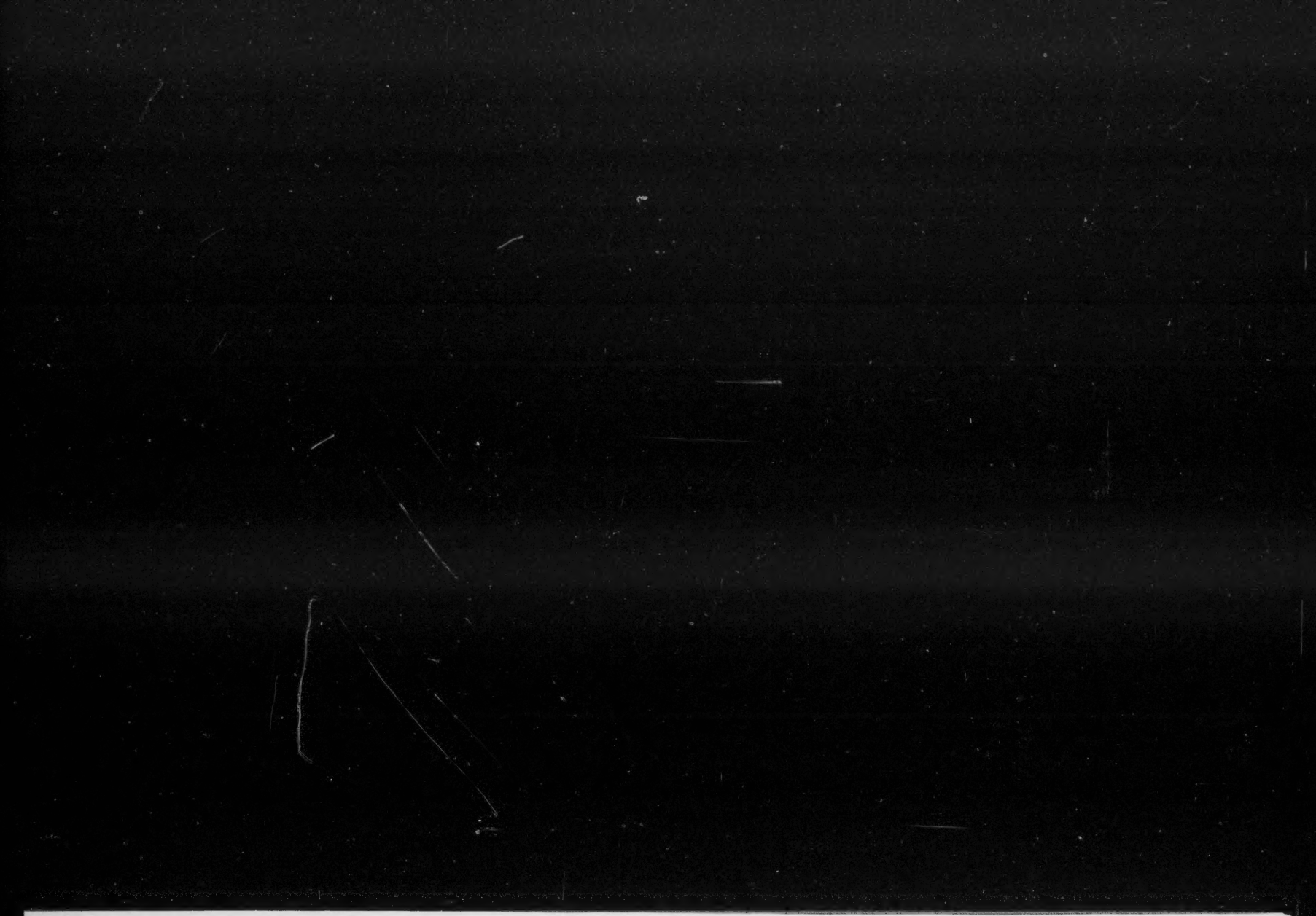
S. J. Schauer, **C. L. Watkins, L. K. Krannich,** R. B. Gala, E. M. Gundy and C. B. Lagrone 3505 Synthesis and characterization of Me_3Ga and Me_3In: adducts of secondary amines

S. V. Volkov, **V. A. Bandur** and N. I. Buryak	3515	Oxygen states in the case of interaction of O_2 with metaphosphate melts containing 3*d*-metal ions
Jinyu Li, Jianzhong Zou, Mingfei Wu, **Zheng Xu,** Xiaozeng You and T. C. W. Mak	3519	Synthesis, crystal structure and magnetic properties of oxo-bridged binuclear iron(III) complex $[Fe(phen)_2PhCOO]_2OCl_2 \cdot 7H_2O$
Sang Kyung Yun and **Moo-Jin Jun**	3525	The stereochemistry of the dichlorocobalt(III) complexes with (2*S*,5*S*,9*S*)- and (2*S*,5*R*,9*S*)-trimethyltriethylenetetraamines
Shu-Hui Cai and **Chun-Wan Liu**	3537	Studies on the band structures of some Laves-phase compounds
Lan Yan, Jianmin Liu, Xin Wang, **Rudong Yang** and Fangliang Song	3545	Synthesis and crystal structure of the dinuclear complex of 6-methylpicolinic acid *N*-oxide with lanthanum(III)
B. S. Manhas, B. C. Verma and **S. B. Kalia**	3549	Spectral and magnetic studies on normal cobalt(II) planar and cobalt(III) octahedral, spin-crossover cobalt(III) octahedral and planar–tetrahedral cobalt(II) carbodithioates
Bin Zhao, **Yang Jie Wu,** Jing Chao Tao and Han Zhen Yuan	3557	The syntheses of new nitrogen–oxygen donor macrocycles and liquid membrane transport of alkali cations
G. A. Spyroulias, M. P. Sioubara and **A. G. Coutsolelos**	3563	Cationic lanthanide monoporphyrinates with Sm, Eu, Gd and Tb, synthesis and spectroscopic properties in aqueous and non-aqueous media
P. Starynowicz	3573	Structure and spectroscopy of diaqua(μ_3-acetato)(acetato-*O*)(acetic acid-*O*)europium(II), $[Eu(OAc)_2(AcOH)(H_2O)_2]$
Yuan Chunbo, Liu Juzheng, Zhao Daqing, Wu Yijie and Ni Jiazuan	3579	Lanthanide-induced shift and relaxation rate studies of the aqueous complexation of citrate
A. Das, H. C. Bajaj and **D. Chatterjee**	3585	Synthesis, characterization and physicochemical studies of weakly interacting redox-responsive binuclear complexes incorporating ethylenediaminetetraacetatoruthanate(III)
N. Ghatak, J. Chakravarty and **S. Bhattacharya**	3591	Synthesis, characterization and electron transfer properties of some picolinate complexes of ruthenium
Xiu-Fen Yu, Fa-Kun Zheng and Liang-Ren Huang	3599	Syntheses and crystal structures of heptanuclear clusters $[VS_4(CuPPh_3)_5Br_2CuX]$ and $[VS_4(CuPPh_3)_5Br_2CuX] \cdot CH_2Cl_2$ (X=0.5Br+0.5Cl)
Shixia Liu, **Weisheng Liu,** Xiuli Wang and Minyu Tan	3605	Synthesis and characterization of complexes of lanthanide nitrates with *N*,*N*′-dinaphthyl-*N*,*N*′-diphenyl-3,6-dioxaoctanediamide
Zhong Chen, Yi-Jian Zhang, Yang Gung, Yifan Wu and **R. Massoudi**	3611	Synthesis and kinetics of the acid hydrolysis of the monothiooxalato-*S*,*O*-bis(ethylenediamine)chromium(III) complex
M. McCann, J. F. Cronin, M. Devereux, V. McKee and G. Ferguson	3617	Mononuclear and binuclear copper(II) complexes of benzene-1,2-dioxyacetic acid ($bdoaH_2$): X-ray crystal structures of $[Cu(bdoa)(C_6H_5NH_2)_2]_2C_6H_5NH_2$ and $[Cu_2(bdoa)(bipy)_4]bdoa \cdot 8.66H_2O$ ($C_6H_5NH_2$=aniline, bipy=2,2′-bipyridine)
Z. Trávníček, R. Pastorek, Z. Šindelář, R. Klička and J. Marek	3627	Reactions of bis(isopropylxanthato)nickel(II) with nitrogen-donor ligands—II
R. C. Greaves, S. P Bond and W. R. McWhinnie	3635	Conductivity studies on modified laponites

V. K. Jain, S. Kannan, R. J. Butcher and J. P. Jasinski — 3641 — Binuclear complexes of palladium(II) and platinum(II) containing bridging ethylselenolato group: X-ray crystal structure of $[Pt_2Cl_2(\mu\text{-SeEt})_2(PEt_3)_2]$

Cheng Wen-Dan, Guo Guo-Cong, Huang Jin-Shun and Lu Jia-Xi — 3649 — Influence of d–p π-conjugate interaction upon electronic spectra in some cluster compounds

M. McCann, K. Maddock, C. Cardin, M. Convery and G. Ferguson — 3655 — Synthesis and X-ray crystal structure of the triethylammonium magnesium β-octamolybdate(VI) salt $[Et_3NH]_2[Mg(H_2O)_6Mo_8O_{26}] \cdot 2H_2O$

S. K. Chattopadhyay, T. C. W. Mak, Bao-Sheng Luo, L. K. Thompson, A. Rana and **S. Ghosh** — 3661 — Synthesis, structural and magnetic studies of imadazolium bis(oxalato)cuprate(II)

Ke-Zhi Wang, **Chun-Hui Huang,** Guang-Xian Xu and Ru-Ji Wang — 3669 — Synthesis, characterization and crystal structure of $Me_2NC_6H_4CH{=}CHC_5H_4N(C_2H_5)^+[La(TTA)_4]^-$(TTA=$a$-thenoyltrifluoroacetonato)